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DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION  
OF THE STATE OF MONTANA

# Oil and Gas Conservation Division

Thomas L. Judge, Governor



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ANNUAL REVIEW FOR THE YEAR 1976

Relating to

## OIL AND GAS

Volume 20

### BOARD OF OIL AND GAS CONSERVATION

R. A. CAMPBELL, Chairman  
1222 North 27th Street  
Billings, Montana 59101

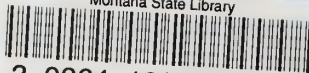
C. J. IVERSON, Vice-Chairman  
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OF THE STATE OF MONTANA**

# **Oil and Gas Conservation Division**

**Thomas L. Judge, Governor**



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P.O. Box 997  
Cut Bank, Montana 59427

**1976**  
**SUMMARY OF YEAR ACTIVITIES**

Oil Produced		32,814,260
Oil Imported (Refined)		
Canadian	- 23,496,125	
Wyoming	- <u>18,310,652</u>	41,806,777
Oil Exported (Transporters)		24,185,668
Gas Withdrawals		
Natural	40,876,873	
Associated	<u>3,336,001</u>	44,212,874
Averages: (366 days)		
Oil Produced	89,656	
Oil Imported	114,226	
Oil Exported	66,081	
Natural Gas	120,800	

# Board of Oil and Gas Conservation of the State of Montana

Thomas L. Judge, Governor

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Southern District Field Office ..... 15 Poly Drive, Billings, Montana 59101

Northern District Field Office .....218 Main Street, Shelby, Montana 59474

## Annual Review for the Year 1976 Volume 20

### ANNUAL REVIEW — MONTANA 1976

The production of natural gas in Montana was up from 43,622,600 MCF in 1975 to 44,212,874 MCF in 1976. This increase of 590,274 MCF is mainly attributed to the placing of shut-in as well as some newly developed gas wells on stream.

Oil production for 1976 was maintained at near last years total output, 32,814,260 Bbls. as compared to 32,843,674 for 1975. This is largely due to the success of secondary recovery programs, particularly at Bell Creek Field. Powder River County, where production showed a steady increase over the last three months of the year.

There were 787 wells drilled in Montana in 1976, including 17 oil and 8 gas, new field discoveries, and 11 new pay or significant field extensions. A total of 248 exploratory wells resulted in 25 discoveries for a success ratio of 10.1%, up nearly 2% from last years exploratory success ratio of 8.2%. Of the 539 development wells drilled, 106 were completed as oil wells and 264 as gas wells for a success ration of 68.7%, a substantial success increase of 6.5% over 1975.

Total drilling in 1976 amounted to 58 less wells than in the previous year when Montana recorded its second best year with 845 completions. Although exploratory drilling this year decreased by only 9 wells, the greater difference in drilling activity was in infield drilling where active development programs in 1975 completed 588 wells as compared to 539 during 1976.

Exploratory and development drilling pursued the economic potential of the shallow pay zones in Choteau, Glacier, Hill, Liberty, Pondera and Toole counties of northwestern Montana. A total of 73 wildcats in this area resulted in 11 discoveries or extensions, 4 oil and 7 gas; and of the 281 development wells drilled, 162 were completed as gas producers and 43 for oil. The discoveries include a new gas pay from the Devonian Nisku formation at Kevin-Sunburst field, Toole County, significantly upgrading the potential of the Nisku as a major new gas reservoir in the general area.

Considerable interest was also demonstrated in the shallow Bowdoin and Eagle gas sands along Bowdoin Dome and the Bearpaw Arch in Phillips and Blaine Counties of northcentral Montana. Of the 80 wells drilled in Phillips County 63 were completed as Bowdoin Sand gas producers, and 22 of the 69 wells drilled in Blaine County were completed as gas producers from the Eagle Sand.

The increase in exploratory drilling for the deep Madison, Devonian, Silurian and Red River oil pools in the Williston Basin portion of eastern Montana resulted in the successful completion of 14 new field discoveries, 1 new pay discovery and 2 field extensions. Development and exploration is continuing to increase in the Williston Basin and similar successes are indicated.

Drilling for added oil production from the Pennsylvanian Tyler sands along the central Montana uplift in Musselshell and Rosebud Counties progressed at a high rate. Completions in this area included 2 discoveries, 2 field extensions and 22 development producers.

Interest continues to grow along the Overthrust Belt in western Montana. Subsurface and surface geological interpretations indicate the possible existence of giant oil and or gas fields in this area similar to those immediately north of the state boundary. Aggressive exploratory research needed to delineate drillable prospects along this complex geological structure is in progress and should culminate in the drilling of one or more wells in 1977.

Large prospective areas of Montana, including the Overthrust Belt, are sparsely drilled and it is highly possible that major reserves remain to be found. However, a proper economic atmosphere and an energy policy with a minimum of restrictions and controls in support of expensive sustained exploration programs are necessary to find this much needed oil and gas.





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# FIVE YEAR SUMMARY

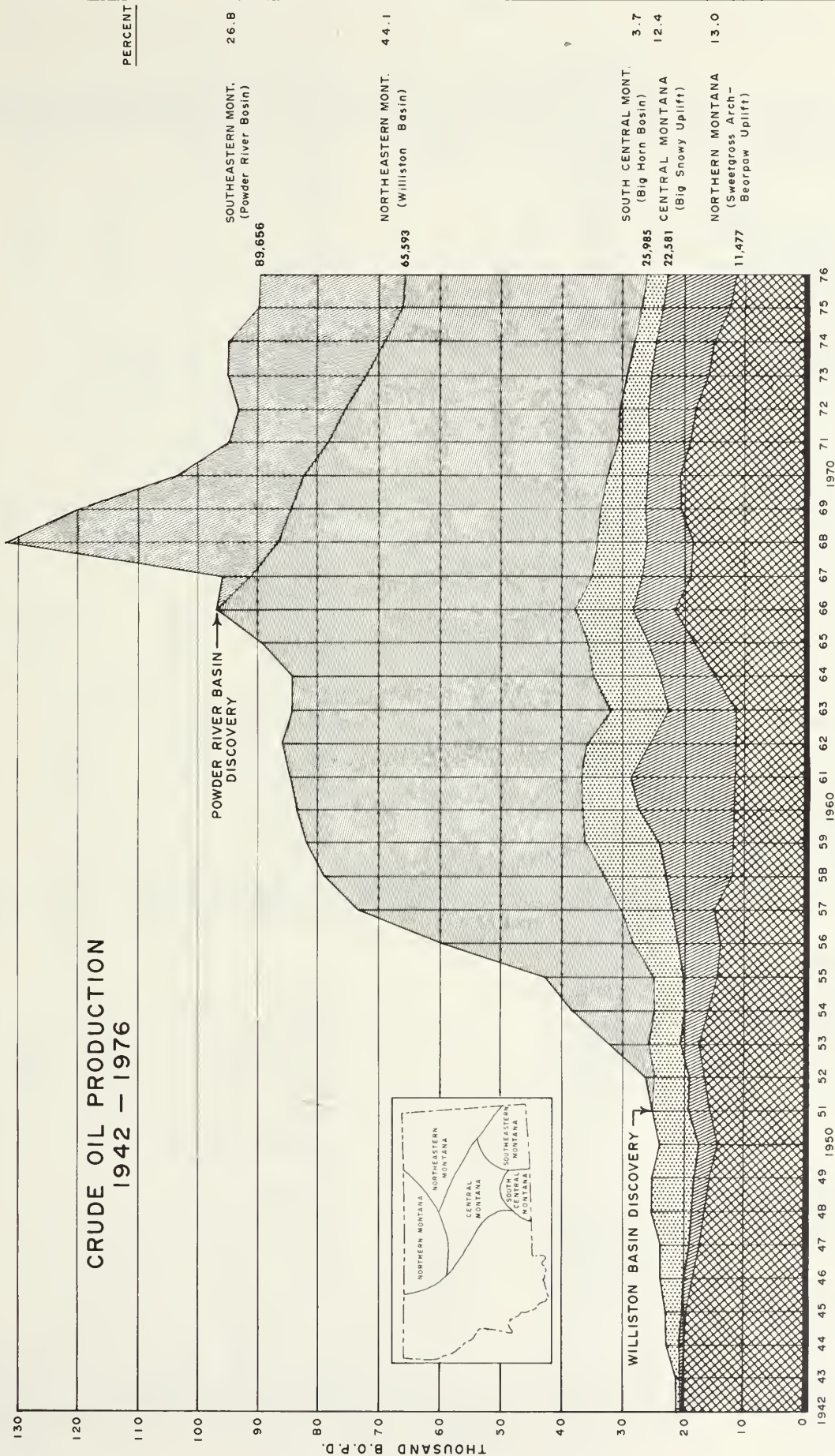
	1972	1973	1974	1975	1976
Production, Northern Montana — Bbls. ....	6,646,908	5,948,826	5,464,319	4,551,324	4,200,539
South Central — Bbls. ....	1,742,749	1,515,088	1,432,528	1,318,779	1,246,005
Central — Bbls. ....	2,817,045	3,238,967	3,334,759	3,954,024	4,063,897
Williston Basin — Bbls. ....	16,361,771	15,735,703	14,939,292	14,312,685	14,496,380
Powder River Basin — Bbls. ....	6,335,666	8,181,598	9,383,064	8,706,862	8,807,439
TOTAL .....	33,904,139	34,620,182	34,553,962	32,843,674	32,814,260
No. of Producing Wells, Northern Montana.....	1,856	1,708	1,802	2,067	1,978
South Central .....	83	83	86	100	97
Central .....	224	245	267	303	316
Williston Basin .....	706	709	712	734	737
Powder River Basin .....	265	248	233	231	181
TOTAL .....	3,134	2,993	3,100	3,435	3,309
Average Daily Production/Well — BOPD,					
Northern Montana.....	9.8	9.5	8.3	6.0	5.8
South Central .....	57.4	50.0	45.6	36.1	35.1
Central .....	34.4	36.2	34.2	35.8	35.2
Williston Basin .....	63.3	60.8	57.4	53.4	53.8
Powder River Basin .....	65.3	90.4	100.3	103.2	133.3
STATE AVG. ..	29.6	31.7	30.5	26.2	27.1
Development Wells Drilled, Oil Wells.....	79	46	58	105	106
Gas Wells .....	97	165	179	261	264
Dry Holes.....	87	100	212	222	169
TOTAL.....	263	311	449	588	539
Exploratory Wells Drilled, Oil Wells .....	7	6	7	6	17
Gas Wells.....	19	36	21	15	8
Dry Holes .....	435	366	265	236	223
TOTAL WELLS DRILLED .....	461	408	293	257	248
TOTAL WELLS DRILLED .....	724	719	742	845	787
TOTAL FOOTAGE DRILLED .....	2,300,075	1,834,288	2,173,519	2,467,838	2,826,301
AVERAGE DEPTH OF ALL WELLS.....	3,177	2,551	2,929	2,921	3,591

**SUMMARY OF DRILLING BY COUNTIES — 1976**  
**STATE OF MONTANA**

County	Wildcats			Development			Total Wells	Footage Drilled	Average	
	Dry	Oil	Gas	Dry	Oil	Gas			Depth	
Beaverhead.....	1						1	15,723	15,723	
Big Horn.....	2		1				3	10,090	3,363	
Blaine.....	19			28		22	69	144,207	2,090	
Carbon.....	3			1	1	3	8	53,048	6,631	
Carter.....	2						2	5,883	2,941	
Cascade.....	4						4	11,310	2,827	
Chouteau.....	16			6		21	43	87,976	2,046	
Custer.....	8			1			9	38,877	4,319	
Daniels.....	1						1	10,455	10,455	
Dawson.....	2				1		3	30,640	10,213	
Fallon.....				2	12	7	21	140,383	6,685	
Garfield.....	4			2			6	26,159	4,359	
Glacier.....	3			2			65	182,699	2,810	
Golden Valley.....	2		1	14	10	37	2	10,805	5,402	
Granite.....	1						1	5,473	5,473	
Hill.....	6		1	22		20	49	95,047	1,939	
Liberty.....	10			11	9	30	60	153,377	2,256	
McCone.....	3			3	2		8	59,473	7,434	
Musselshell.....	21	1		21	7		50	212,305	4,246	
Petroleum.....	3						3	8,814	2,938	
Phillips.....	17					63	80	135,715	1,696	
Pondera.....	10	1		1	12	12	36	75,109	2,086	
Powder River.....	6			5	2	3	16	71,803	4,487	
Richland.....	8	11		5	7		31	382,305	12,332	
Roosevelt.....	7	2		3	5		17	145,684	8,569	
Rosebud.....	12	1		12	17		42	222,433	5,296	
Sheridan.....	7	1		1	4		13	112,341	8,641	
Stillwater.....	5			4		2	11	31,885	2,898	
Sweetgrass.....	3						3	21,034	7,011	
Teton.....	3		1	1	3		8	24,062	3,007	
Toole.....	22		3	22	12	42	101	216,654	2,145	
Valley.....	7					1	8	44,575	5,572	
Wheatland.....	3			2			5	19,765	3,953	
Yellowstone.....	2		1	2	2	1	8	20,192	2,524	
TOTALS.....	223	17	8	169	106	264	787	2,826,301		3,591



# CRUDE OIL PRODUCTION 1942 - 1976



# GAS PRODUCTION DATA — 1976

Field	County	Producing Formations	1976 Production MCF		
NATURAL GAS:					
Alma .....	Liberty .....	Blackleaf, Bow Island & Sawtooth .....	18,908		
Bears Den .....	Liberty .....	Sawtooth & Sunburst .....	16,143		
Big Coulee .....	Golden Valley & Stillwater .....	Lakota & Morrison .....	1,486,330		
Black Coulee .....	Blaine .....	Eagle .....	77,203		
Black Jack .....	Liberty .....	Sunburst, Swift & Blackleaf .....	242,461		
Bowdoin .....	Phillips, Valley .....	Bowdoin & Phillips .....	6,320,278		
Bowes .....	Blaine .....	Eagle .....	935,061		
Brown's Coulee .....	Hill .....	Judith River & Eagle .....	51,218		
Bullwacker Area .....	Blaine, Chouteau .....	Judith River, Eagle (Virgelle) .....	447,373		
Canadian Coulee .....	Hill, Liberty .....	Sawtooth .....	842,314		
Cedar Creek .....	Fallon .....	Judith River, Eagle .....	1,753,128		
Coal Coulee .....	Hill .....	Eagle .....	105,860		
Conrad Butte .....	Pondera, Toole .....	Blackleaf, Bow Island & Dakota .....	86,879		
Cut Bank & Reagan .....	Glacier, Toole .....	Blackleaf, Cut Bank & Madison .....	4,366,625		
Dry Creek .....	Carbon .....	Eagle, Frontier, Greybull .....	728,593		
Ethridge .....	Toole .....	Bow Island, Swift .....	80,658		
Flat Coulee .....	Liberty .....	Blackleaf, Sunburst, Sawtooth, Bow Isl. .....	171,032		
Fresno .....	Hill .....	Judith River & Eagle (Virgelle) .....	112,979		
Grandview .....	Liberty .....	Bow Island, Madison .....	96,367		
Hardin .....	Big Horn .....	Frontier .....	28,148		
Keith Block .....	Liberty .....	Bow Island, Sawtooth .....	999,874		
Kevin-Sunburst .....	Toole .....	Sunburst, Swift, Sun River & Nisku .....	391,852		
Kicking Horse .....	Toole .....	Sun River .....	177,704		
Kinyon Coulee Area .....	Toole .....	Bow Island .....	67,243		
Lake Basin .....	Stillwater .....	Kf, Ke, Kve, Ktc .....	649,048		
Liscom Creek .....	Custer .....	Shannon .....	317,682		
Middle Butte .....	Toole .....	Blackleaf .....	17,664		
Middle Dry Creek .....	Carbon .....	Frontier .....	40,732		
Mt. Lilly .....	Liberty .....	Madison .....	154,680		
North Clark's Fork .....	Carbon .....	Lakota .....	22,908		
Plevna .....	Fallon .....	Judith River .....	52,749		
Pumpkin Creek .....	Custer .....	Shannon .....	730,996		
Rapelje .....	Stillwater .....	Judith River, Claggett, Eagle & Virg. .....	490,646		
Sawtooth Mountain .....	Blaine .....	Judith River & Eagle .....	553,457		
Sherard .....	Blaine, Chouteau .....	Eagle, Virgelle .....	1,379,327		
Snoose Coulee .....	Liberty .....	Bow Island .....	11,530		
South Clark's Fork .....	Carbon .....	Greybull .....	34,604		
South Devon .....	Toole .....	Bow Island .....	156,367		
Strawberry Creek Area .....	Toole .....	Bow Island .....	65,003		
Swanson Creek .....	Phillips .....	Phillips .....	61,654		
Tiger Ridge .....	Blaine, Hill .....	Judith River, Eagle .....	14,781,619		
Trail Creek .....	Liberty, Toole .....	Sunburst .....	101,724		
Utopia .....	Liberty .....	Ellis, Sawtooth, Madison .....	273,235		
West Butte .....	Toole .....	Sawtooth, Madison .....	386,994		
Whitlash .....	Liberty .....	Bow Island, Kootenai, Swift .....	989,963		
SUBTOTAL			40,876,873		
Associated Gas:					
Bell Creek .....	Powder River .....	Muddy .....	524,330		
Cabin Creek .....	Fallon .....	Interlake, Red River .....	488,509		
Elk Basin .....	Carbon .....	Tensleep .....	369,660		
Fairview .....	Richland .....	Red River .....	446,218		
Four Mile Creek .....	Richland .....	Red River .....	23,368		
Glendive .....	Dawson .....	Red River .....	1,005		
Keg Coulee .....	Musselshell .....	Tyler .....	2,252		
Middle Sioux Pass .....	Richland .....	Red River .....	31,536		
Otis Creek .....	Richland .....	Red River .....	36,351		
Pine .....	Dawson, Prairie, Fallon & Wibaux .....	Interlake, Red River .....	508,349		
Rattlesnake Coulee .....	Toole .....	Sunburst .....	157		
Richland .....	Richland, Roosevelt .....	Mm, Dw, Si, Orr .....	520,410		
Sioux Pass .....	Richland .....	Mmc, Si, Orr .....	102,245		
Sioux Pass, North .....	Richland .....	Dn, Dw, Si, Orr .....	60,814		
Sumatra .....	Rosebud .....	Tyler .....	160,916		
Tule Creek .....	Roosevelt .....	Nisku .....	59,881		
TOTAL ASSOCIATED GAS			3,336,001		
TOTAL GAS PRODUCED — 1976			44,212,874		
Natural Gas Imported:	Canada MCF	34,934,730	Natural Gas Exported: Midwest States MCF	13,185,083	
	Wyoming MCF	379,074	Canada (Couts) MCF	43,926	
TOTAL Imported	MCF	35,313,804	TOTAL Exported	MCF	13,229,009



# BARRELS OF CRUDE OIL REFINED IN MONTANA — 1976

Fields	BIG WEST OIL CO.	CONTINENTAL OIL CO.	EXXON COMPANY	FARMERS UNION	PHILLIPS PETR. CO.	TESORO PETR. CO.	WESTCO REF. CO.	TOTAL
Big Wall		65,089						65,089
Cat Creek		27,049		82,759	1,022,602			1,132,410
Cut Bank	57,285						1,255,077	1,312,362
Devil's Basin				316,599				316,599
Elk Basin		440,511	340,214					780,725
Flat Coulee							120,539	120,539
Fed & George Creek	202,345				106,765			309,110
Ivanhoe		30,079						30,079
Jim Coulee				188,125				188,125
Keg Coulee		126,244	15,344	25,055				166,643
Kelley			34,355					34,355
Kevin-Sunburst	305,829							305,829
Lodge Grass								7,286
Mason Lake		7,286						7,286
Melstone		4,328						4,328
Pondera				14,709				14,709
Ragged Point		122,379			165,331			165,331
Rosebud		69,422						122,379
Richey, Southwest						24,980		69,422
Snyder		5,502						24,980
Sumatra & Stensvad		947,795	601,534	532,412				5,502
Tule Creek & Others								2,081,741
Vaux						718,036		718,036
Volt				7,431				7,431
Whitlash						215,590		215,590
Winnett Junction					241,955		30,563	272,518
Wolf Springs			13,262					33,128
Total Montana Oil	565,459	1,845,684	1,004,709	1,200,218	1,536,653	958,606	1,406,179	8,517,508
Canadian Oil Imported	657,534	11,125,216	5,818,126	5,353,950	539,447			23,494,273
Wyoming Oil Imported		4,494,776	7,719,234	6,096,642				18,310,652
TOTAL Montana, Canadian & Wyoming Oil	1,222,993	17,465,676	14,542,069	12,650,810	2,076,100	958,606	1,406,179	50,322,433

## PERCENTAGE OF CRUDE OIL REFINED

	Montana	Canada	Wyoming
Year: 1974	19.40%	35.79%	46.81%
Year: 1975	18.56%	40.28%	41.16%
Year: 1976	16.93%	46.69%	36.38%

## AVERAGE BARRELS PER DAY

	Montana	Canada	Wyoming	Total
Year: 1974	25,537	44,487	61,627	131,651
Year: 1975	24,463	53,077	54,237	131,777
Year: 1976	23,272	64,192	50,029	137,493

## REFINING FIVE YEAR COMPARISON

	1972	1973	1974	1975	1976
48,464,721		50,967,206	48,052,776	48,098,535	50,322,433

# SUMMARY OF SECONDARY RECOVERY PROJECTS-JANUARY 1, 1977

Field, Formation	Operator	Type of Project	Injection Pattern	Date Injections Commenced	Cumulative Injections 1000's Bbls. or MCF	Dec. 1976 Avg. Daily Inj. Rate Bbls. or MCF	No. of Injection Wells	Source of Injection Media and Remarks
Ash Creek, Shannon	McDermott	Waterflood	Peripheral	10-15-64	1,077	169	3	Parkman
Bell Creek, Unit "A", Muddy	Gary	Waterflood	Peripheral	7- 1-70	75,000	36,471	31	Madison
Bell Creek, Unit "B", Muddy	Gary	Waterflood	Peripheral	10- 1-70	21,252	9,610	12	Madison
Bell Creek, Ranch Creek Unit, Muddy	Gary	Waterflood	Peripheral	7- 1-71	25,500	10,791	11	Madison
Bell Creek, Unit "C", Muddy	Gary	Waterflood	Peripheral	12- 1-71	11,375	8,452	6	Madison
Bell Creek, Unit "D", Muddy	Gary	Waterflood	Peripheral	8-72	14,300	8,813	12	Madison
Bell Creek, Unit "E", Muddy	Gary	Waterflood	Peripheral	8-72	10,600	7,076	16	Madison
Big Wall, Tyler B	Texaco, Inc.	Waterflood	Peripheral	8-20-66	18,100	4,863	2	Produced, Amsden & Tyler
Blackfoot, Cut Bank	Croft	Waterflood	Random	11-76	012	200	2	Madison
Border, New, Cut Bank	BGG Co.	Waterflood	Random	6- 1-73	232	183	1	Madison
Border, Old, Cut Bank	BGG Co.	Waterflood	Random	6- 1-73	622	378	4	Madison
Bowes, Sawtooth	Texaco, Inc.	Waterflood	Random	5-23-61	7,500	10,602	4	Madison
Cabin Creek, Siluro-Ord.	Shell	Waterflood	Semi-Peripheral	6-12-59	157,400	33,128	30	Produced & Fox Hills
Cat Creek, East Dome, Swift	Moss	Waterflood	Semi-Peripheral	7-30-70	368	252	4	Third Cat Creek
Cat Creek, (Unit 1), 1st & 2nd CC	Farmers Union	Waterflood	Semi-Peripheral	10-10-62	11,045	1,972	7	Third Cat Creek
Cat Creek, (Unit 2), 1st & 2nd CC	Farmers Union	Waterflood	Semi-Peripheral	12- 1-59	17,745	1,030	6	Third Cat Creek
Cat Creek, Mosby, Swift	Farmers Union	Waterflood	Random	7-67	3,818	1,191	4	Third Cat Creek
Cat Creek, Mosby, Amsden	Farmers Union	Waterflood	Random	6- 1-71	830	420	1	Third Cat Creek
Cut Bank, Marena, Cut Bank	BGG Co.	Waterflood	S-5-Spot	6-72	1,673	1,021	8	Madison
Cut Bank, Tweedy, Cut Bank	BGG Co.	Waterflood	S-5-Spot	6-72	804	249	3	Madison
Cut Bank, NE, Cut Bank	Texaco, Inc.	Waterflood	S-5-Spot	6- 2-63	13,235	810	5	Madison
Cut Bank, NW, Cut Bank	Phillips	Waterflood	S-5-Spot	1-30-62	15,000	1,717	15	Madison
Cut Bank, SE, Cut Bank	Union	Waterflood	S-5-Spot	5-63	32,072	6,326	47	Madison
Cut Bank, SW, Cut Bank	Texaco, Inc.	Waterflood	S-5-Spot	4-62	52,051	7,939	49	Madison
Cut Bank, Lander "A"	Phillips	Waterflood	S-5-Spot	9-62	76,000	17,252	87	Madison
Cut Bank, Lander "A"	Phillips	Waterflood	Random	4-65	1,475	189	2	Madison
Cut Bank, Lander	Texaco, Inc.	Waterflood	Random	7-64	7,382	1,484	5	Eagle
Cut Bank, McGuinness, Moulton	Union	Waterflood	Random	12-62	4,000	920	1	Madison
Cut Bank, Cut Bank	Tesoro	Waterflood	S-5-Spot	9- 1-71	3,346	2,109	20	Madison
Cut Bank, Two Medicine, Cut Bank	Miami	Waterflood	Random	12-67	40,557	4,898	74	Madison
Cut Bank, Moulton, Moulton	Union	Waterflood	Random	11-69	15,832	12,789	6	Water Inj. into Madison
		Gas Injection	Random	5-15-71	Shut-in	0	0	Gas Inj. into Moulton
Darling, State, Moulton	BGG Co.	Waterflood	Random	2-67	2,467	279	1	Madison
Darling, NE Unit, Moulton	Ralph Fair	Waterflood	Random	2-68	4,821	1,156	2	Produced Water
Darling, South Swenson, Moulton	BGG Co.	Waterflood	Random	2-67	7,383	594	3	Madison
Dwyer, Ratcliffe	Phillips	Waterflood	Peripheral	10-68	1,487	358	5	Madison
Elk Basin, Embar-Tensleep	Amoco	Waterflood	Random	12-72	2,278 M	54 MCF	1	Produced Gas
Elk Basin, Frontier	Amoco	Waterflood	Random	1926	2,735	1,326	2	Madison
Elk Basin, Unit 2, Tensleep	Amoco	Waterflood	Random	1949	2,171	0	0	Produced Water
Elk Basin, Madison	Amoco	Waterflood	Peripheral	1962	59,885	12,816	8	Produced Water
Elk Basin, NW, Tensleep	Atlantic-Richfield	Waterflood	Semi-Peripheral	5-76	4,333	1,947	2	Madison
Fairview, NW Unit, Red River	Superior	Gas Injection	Crestal	10-25-67	2,857 M	778 MCF	1	Produced Gas
Flat Coulee, Swift	Phillips	Waterflood	Peripheral	2- 1-72	3,525	4,216	15	Eagle
Flat Lake, Ratcliffe	Chevron	Waterflood	Random	6- 1-71	13,000	5,934	11	Produced Water
Frannie, Tensleep	Continental	Waterflood	Random	9-70	2,090	775	1	Produced Water
Fred & George, Sunburst	Fulton	Waterflood	Random	7-70	15,140	7,320	2	Madison & Eagle
Gas City, Red River	Shell	Waterflood	Semi-Peripheral	10-31-69	8,500	3,276	7	Mission Canyon
Goose Lake, Ratcliffe	Cotton Petroleum	Waterflood	Semi-Peripheral	1-73	4,706	2,561	2	Produced water
Jim Coulee, Tyler B	McAlester Fuel	Waterflood	Semi-Peripheral	6- 1-72	4,876	3,580	5	Third Cat Creek
Keg Coulee, NW Unit, Tyler B	Ada Oil	Waterflood	Semi-Peripheral	8-31-66	5,053	410	1	Madison
Keg Coulee, East, Tyler	Continental	Waterflood	Semi-Peripheral	12-24-69	3,463	271	2	Third Cat Creek
Keg Coulee, South, Tyler	BGG Co.	Waterflood	Semi-Peripheral	1- 1-70	2,207	1,194	2	Madison
Kelley, Tyler	McAlester Fuel	Waterflood	Random	7-69	1,907	882	2	Third Cat Creek
Kevin-Sunburst, Madison	Lon Crumley	Waterflood	Random	9-63	0	0	2	Madison
Kevin-Sunburst, Madison	BGG Co.	Waterflood	Random	8-64	6,208	1,835	9	Madison
Kevin-Sunburst, Madison	Texaco, Inc.	Waterflood	Semi-Peripheral	8-64	8,823	1,216	10	Madison
Little Beaver, Red River	Shell	Waterflood	Semi-Peripheral	8- 7-66	25,220	6,342	13	Madison
Little Beaver, East, Red River	Shell	Waterflood	Semi-Peripheral	4-65	10,054	1,657	6	Madison
Lookout Butte, Red River	Shell	Waterflood	Semi-Peripheral	4-67	20,966	5,254	11	Minnelusa
Lookout Butte, Madison	Shell	Waterflood	Semi-Peripheral	2-69	2,058	690	1	Minnelusa
Monarch, Silurian	Shell	Waterflood	Random	12- 1-73	104	0	3	Siluro-Ord.
Pennel, Red River	Shell	Waterflood	Random	6-28-69	52,446	24,427	46	Oakota and Produced
Pine, South, Red River	Shell	Waterflood	Semi-Peripheral	3-59	138,103	26,224	32	Fox Hills and Produced
Pine, North, Red River	Shell	Waterflood	Semi-Peripheral	3-68	15,182	4,326	10	Lodgepole
Prichard Creek, Sunburst	Fulton Producing	Waterflood	Random	4-73	230	0	0	Eagle
Ragged Point, Tyler	BGG Co.	Waterflood	Semi-Peripheral	12- 3-66	6,380	365	4	Third Cat Creek
Reagan, Madison	Union	Gas Injection	Random	8-61	4,537 M	490 MCF	2	Gas Injection
Red Creek, Cut Bank	Exxon	Waterflood	S-5-Spot	6-65	10,716	2,679	5	Madison
Richey SW, Interlake	Atlantic-Richfield	Waterflood	Random	12-65	2,238	175	1	Fox Hills
Stensvad, Tyler	Ada Oil	Waterflood	Semi-Peripheral	2-63	27,401	3,564	7	Madison
Sumatra, West, Tyler	Continental	Waterflood	Semi-Peripheral	10-68	15,575	7,386	9	Madison
Sumatra, Central, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	54,632	25,778	16	Madison
Sumatra, NE, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	3,924	1,901	7	Madison
Sumatra, SE, Tyler	BGG Co.	Waterflood	Semi-Peripheral	12- 1-69	8,189	3,512	7	Madison
Sumatra, Grebe, Tyler	Farmers Union	Waterflood	Random	6-16-75	157	391	1	Third Cat Creek
Willow Creek, North, Tyler B	Resources Investment	Waterflood	Random	6- 1-72	120	0	1	Produced

OIL AND GAS DISCOVERIES IN 1976

County	Operator-Well Name and Location	Field	Total Depth	Initial Oil, B/O	Potential Gas, MCF	Producing Formation	Date Completed
Big Horn	West Gas, Inc., Kincaid 3-14, C NW 1/4 14-15-32E	Unnamed	1,250		Shut-In	Mowry (Big Elk)	12- 8-75
Glacier	Danson Oil, Tribal 8-1, SE NW 2-35N-7W	Unnamed	2,723		Shut-In	Bow Island	8-16-76
Hill	Oil Resources, Bangs 28-15, SW SE 28-36N-8E	Unnamed	2,380		Shut-In	Bow Island	2-18-76
Musselshell	True Oil, Houghton 44-14, C SE SE 14-10N-29E	Unnamed	4,610	214		Tyler	9-25-76
Pondera	Placid Oil, Copenhagen 1, NW NE 32-27N-2E	Unnamed	1,996	Shut-In		Swift	8- 3-76
Richland	Pennzoil, Nevins 1, NE SE 9-23N-57E	South Fork	12,490	110		Red River	5-17-76
	Ensearch Explor., Gartner 1, NW SW 23-23N-58E	Vaux	12,561	93		Red River	5- 4-76
	Shell Oil, BN 21x25, NE NW 25-23N-59E	Big Bend	12,740	189		Red River	4-29-76
	Pennzoil, Watts 1, C NE NE 21-24N-59E	North Fork	12,780	163		Red River	6- 9-76
	Farmers Union, Edeburn 5-24, SW NW 24-25N-54E	Charlie Creek	11,820	95		Nisku	8-26-76
	True Oil, BN 42-1, NW SE NE 1-25N-56E	Unnamed	12,669	720		Red River	11- 4-76
	True Oil, McGinnis 44-1, C SE SE 1-25N-57E	Unnamed	12,720	73		Red River	11-27-75
	True Oil, Delaney 41-44, SE NE NE 4-25N-58E	Four Mile Creek	12,616	50		Red River	10-10-76
	Luff, State 1-27, NE NW SW 27-26N-57E	Middle Sioux Pass	12,770	235		Red River	2-14-76
	Helmerich & Payne, Anderson 1-32, NE NW 32-26N-58E	Unnamed	12,630	165		Red River	12-14-76
	R. L. Burns, Montana-Federal 1, SE SW 24-27N-55E	Boulder	11,962	1,203		Duperow	1-12-76
Roosevelt	True Oil, State 42-20, SW SE NE 20-28N-56E	Unnamed	12,090	440		Red River	10- 1-76
	Farmland Int'l., Jacobsen 2-13, SE NW 13-30N-57E	Unnamed	12,353	120		Red River	10-29-76
Rosebud	True Oil, 71 Ranch Co 42-10, C SE NE 10-12N-33E	Breed Creek	4,990	192		Tyler	9- 5-76
Sheridan	Bomac Exploration, Miller 1, SE NW 28-33N-57E	Dagmar	11,430	40		Red River	10-10-76
Teton	Danson Oil, State 1, SE NE 17-27N-7W	Unnamed	3,000		Shut-In	Bow Island	12- 9-76
Toole	Jerry Branch, Flesch 1, NE NE NW 35-34N-2W	Prairie Dell	1,330		70	Swift	1-29-76
	True Oil, Tomayer 43-29, NE SE 29-35N-2E	Unnamed	2,190		Shut-In	Bow Island	11-12-76
	True Oil, Holtz 33-22, C NW SE 22-37N-2W	Unnamed	2,265		Shut-In	Sunburst	12-23-76
Yellowstone	West Gas, Barber 5-8, NE SW NW 8-35-25E	Unnamed	993		780	Dakota	8-29-76
<u>SIGNIFICANT EXTENSIONS <sup>1/</sup> AND NEW PAY ZONES <sup>2/</sup> IN 1976</u>							
Glacier	Danson Oil, Tribal 5-6, NE SW SW 2-37N-7W	Reagan <sup>2/</sup>	2,800		Shut-In	Bow Island	1-22-76
Liberty	Western Natural, Blair 1-3, NW SW SE 3-34N-4E	Grandview <sup>1/</sup>	2,818	14		Swift	10-28-76
	Burlington Northern, Blair 22-23, NW SE NW 23-34N-4E	Horse Creek <sup>1/</sup>	2,660	42		Swift	6- 9-76
	Rossmiller, Mesch 33-17, C NW SE 17-36N-4E	Middle Butte <sup>1/</sup>	1,871		188	Sunburst	12-12-76
Musselshell	Cardinal Drilling, Hamilton 6-10, NE SE NW 10-10N-27E	Unnamed <sup>1/</sup>	3,860	30		Tyler	8- 3-76
	McAlester Fuel, BN 11-5, C SW NW 11-10N-27E	Unnamed <sup>1/</sup>	3,975	425		Tyler	6-27-76
Phillips	Midlands Gas, State 16-71, SE NW 16-37N-31E	Bowdoin <sup>1/</sup>	1,844		450	Bowdoin	9-10-76
Richland	Pennzoil, Sjostron 1, NE NW 15-25N-57E	Sioux Pass <sup>1/</sup>	12,873	143		Red River	11-16-76
	Luff, Martin 1, NE SE 1-26N-57E	No. Sioux Pass <sup>1/</sup>	12,530	365	488	Red River	2- 1-76
	Luff, Federal 1-8, SE SW 8-26N-58E	No. Sioux Pass <sup>2/</sup>	12,643	125		Nisku	2-22-76
Toole	Energy Reserves, Bashor 1, NE NE 34-35N-1W	Kevin-Sunburst <sup>2/</sup>	3,370		1,400	Nisku	1-13-76



## OIL AND GAS FIELDS

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>ALMA</b>					
Blackleaf (L. Cret.)	1	Structural	Depletion	State-wide.	None
Bow Island (L. Cret.)	1				
Sawtooth (M. Jur.)					
<b>ANTELOPE</b>					
Swift (U. Jur.)	4	Structural	Water Drive	(Listed as part of Cat Creek Field.)	None
Kootenai (L. Cret.)	4				
<b>ARCH APEX</b>					
Bow Island (L. Cret.) Gas	8	Strat.	Volumetric	330' from legal subdivision; 2400' from any other drilling or	None
Swift (Jurassic) Gas	3	Strat.	Volumetric	producible gas well producing from the same reservoir; 75'	
Swift (Jurassic) Oil	4	Strat.	Volumetric	topographic tolerance. (Order 4-60.) (Sometimes called	
				Colorado Blackleaf pool.) (Swift) Statewide.	
<b>ASH CREEK</b>					
Shannon (U. Cret.)	3	Structural	Partial Water Drive and Depletion	Spacing waived within utilized portion of field except no well may be drilled closer than 660' from unit boundary. (Order 4- 65.)	Waterflood started October, 1964. (Orders 22-64, 15-66.)
<b>BAINVILLE</b>					
Red River (Ord.)	1	Structural- Strat.	Depletion- Water Drive	State-wide.	Produced water disposed into Red River formation. (Order 7-A- 75).
<b>BANNATYNE</b>					
Swift (U. Jur.)	1	Structural	Comb. Water Drive and Volumetric	Center of 10-acre tracts, 50' topographic tolerance. Commingleing permitted. (Order 20-58.)	Pilot waterflood of Swift suspended in 1963.
Sun River (U. Miss.)	8				
<b>BEARS DEN</b>					
Sunburst (L. Cret.) Gas	3	Structural	Depletion and	State-wide.	None
Swift (U. Jur.) Oil	5	Gas Cap Drive			
Sawtooth (Jur.) Gas	1				
<b>BELL CREEK</b>					
Muddy (L. Cret.) Oil & Gas	176	Strat.	Depletion	Originally 40-acre spacing units with location 660' from unit boundary with 150' tolerance for topographic reasons only. (Order 37-67, 39-67, 50-67, 1-69, 17-70.) Field now unitized.	Six areas unitized (Unit "A", "B", Ranch Creek, "C", "D", and "E".) Floods used Madison water. (Orders 7-70, 23-70, 8-71, 26- 71, 35-71, 36-71.)
Gas	4				
<b>BELL CREEK SOUTHEAST</b>					
Muddy (L. Cret.) Gas	4	Strat.	Depletion	160-acre spacing units, wells 660' from spacing boundary. (Order 31-72.)	None
<b>BENRUD</b>					
Nisku (Dev.)	2	Structural	Water Drive	160-acre spacing units with permitted location within a 1320' square in center of quarter section. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>BENRUD, EAST</b> Nisku (Dev.)	3	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62, 32-66.)
<b>BENRUD, NORTHEAST</b> Nisku (Dev.)	1	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 32-66.)
<b>BERTHELOTE</b> Sunburst (L. Cret.)	1 (Shut-in)	Strat.	Depletion	40-acre spacing units with well no closer than 330' from lease or property line and no closer than 660' between wells. (Order 18-66.)	None
<b>BIG BEND</b> Red River (Ord.)	1	Structural	Water Drive	Refer to Rule 203 (Order 16-71, Docket 14-71.)	None
<b>BIG COULEE</b> 3rd Cat Creek (L. Cret.) Gas Morrison (U. Jur.) Gas	5 1	Structural Structural	Water Drive Water Drive	State-wide.	None
<b>BIG GULLY</b> L. Tyler (Penn.)	2	Strat.	Depletion	State-wide.	None
<b>BIG MUDDY CREEK</b> Interlake (Sil.) Red River (Ord.)	1 3	Structural	Water Drive	One well per 320 acre spacing unit with well no closer than 660 feet from boundary of four east-west units. (Order 4-75.)	None
<b>BIG ROCK</b> Blackleaf (L. Cret.) Gas	6	Strat.	Depletion	State-wide.	None
<b>BIG WALL</b> Amsden (Penn.) Tyler (Penn.)	1 1 13 4 (Shut-in) (Shut-in)	Structural Struct.- Strat.	Water Drive Depletion	Spaced by old state-wide spacing: 330' from lease or property line, 990' between wells in same reservoir. (Order 12-54.)	Previous disposal into Tyler "A" stopped in 1961. Waterflood of Tyler "B" sand started August, 1966. (Order 22-66.)
<b>BLACK COULEE</b> Eagle (U. Cret.)	4	Structural- Strat.	Water Drive	One well per 320-acre spacing unit, two adjacent quarter sections, direction operator's option. Wells to be at least 990' from unit boundary. (Order 6-73.)	None
<b>BLACKFOOT</b> Cut Bank (L. Cret.) Sun River (Miss.)	7 1 (Shut-in)	Strat. Structural	Depletion Water Drive	One well only per 40-acre spacing unit, 300' tolerance from center of spacing unit. Dual completion in Cut Bank and Madison with administrative approval. (Order 3-57.)	Waterflood started November, 1976. (Order 34-76.)
<b>BLACK JACK</b> Sunburst (L. Cret.) Gas Swift (U. Jur.) Gas & Oil Blackleaf (U. Cret.) Gas	10 2 1	Strat.	Depletion	One gas well per 160-acres, no closer than 660' from boundary of each unit. (Order 3-69.) State-wide spacing. Order 3-69 amended to include Blackleaf in spacing and field rules for gas. (Order 4-74.) Blackleaf gas pooled (Order 3-75.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>BORDER</b> Cut Bank (L. Cret.) Oil & Gas	10	Strat.	Depletion	Oil: Unitized into New and Old Border fields. Unitized 6-1-73. (Orders 8-73, 9-73.) Gas: 330' from boundary of legal subdivision. 2,400' between wells in same formation on same lease. 75' topographic tolerance. (Order 7-54.)	Waterflood approved. (Orders 8-73, 9-73.)
<b>BOULDER</b> Duperow (Dev.)	1	Structural	Water Drive	Refer to Rule 203 (Order 16-71, Docket 14-71.)	None
<b>BOWDOIN</b> Bowdoin & Phillips sands in Colorado Shale (U. Cret.) Gas *Gas wells outside boundary.	347 *69 69 (Shut-in)	Structural	Volumetric	One well per quarter section not less than 1000' from lease boundary or less than 2000' from any gas well in same horizon. (Order 29-55.) Unitized 1958. Delineated. (Order 3-72.)	None
<b>BOWES</b> Eagle (U. Cret.) Gas	26	Structural	Volumetric	660' from boundary of legal subdivision, 1320' from other wells in same formation. 75' topographic tolerance. (Order 23-54.) Order 23-54 amended by establishing 160-acre Eagle spacing units in Sec. 5, 6, 7, 8, 17, 18-31N-19E. (Order 44-75.)	None
Sawtooth (M. Jur.) Oil	52 19 (Shut-in)	Structural	Partial Water Drive	330' from lease or property line, 990' between wells in the same formation. (Order 13-54.)	Pilot waterflood initiated in 1961 and expanded to fieldwide waterflood in 1965. (Order 6-61.) Water from Madison.
<b>BRADLEY</b> Sun River (Miss.)	1 1 (Shut-in)	Structural	Water Drive	State-wide.	None
<b>BRADY</b> Sunburst (L. Cret.)	3 (Shut-in)	Strat.	Depletion Partial Water Drive	10-acre spacing units with 75' topographic tolerance from center of spacing unit. (Order 34-62, 55-62.)	None
<b>BRORSON</b> Mission Canyon (Miss.) Oil & Gas Red River (Ord.) Oil & Gas	4 5	Structural	Volumetric Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary (Mission Canyon and Red River). (Order 5-69.) Gas to Brorson Field Plant.	None
<b>BRORSON, SOUTH</b> Red River (Ord.) Oil & Gas	3	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary. (Order 26-68.) Gas to Brorson Field plant.	None
<b>BROWN'S COULEE</b> Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	3	Structural	Volumetric	One well per 160-acre unit with well location no closer than 660' from unit boundary. Commingling permitted with administrative approval. (Order 7-74.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>BRUSH LAKE</b> Red River (Ord.) Oil & Gas (Shut-in)	5 2	Structural-Strat.	Depletion Water Drive	320-acre spacing with initial nine spacing units described in (Order 15-71 corrected.)	None
<b>BULLWACKER</b> Judith River (U. Cret.) Gas Eagle-Virgelle (U. Cret.) Gas	28	Structural	Volumetric	One well per 320-acre spacing unit with well location no closer than 660' from unit boundary & 990' from field boundary. (Order 26-74.)	None
<b>BURNS CREEK</b> Red River (Ord.)	1	Structural	Depletion Water Drive	State-wide.	None
<b>CABIN CREEK</b> Mission Canyon (Miss.) Oil & Gas (Shut-in)	14 4	Structural	Water Drive Depletion	Spacing waived and General Rules No. 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 36-62.) Many wells produce from both Interlake and Red River by dual completions. Gas through extraction plant.	Waterflood of Siluro-Ordovician reservoir has been expanded to full scale peripheral flood. (Orders 60-62, 30-63.)
<b>CANADIAN COULEE</b> Sawtooth (M. Jur.) Gas (Shut-in)	2 1	Structural-Strat	Volumetric	320-acre spacing units with well location no closer than 660' from unit boundary, and 990' from field exterior boundaries. (Order 18-76.)	None
<b>CANADIAN COULEE, NORTH</b> Sawtooth (M. Jur.)	2	Structural-Strat.	Volumetric	640-acre spacing unit. Location to be no closer than 1650' to section line. (Order 15-74.)	None
<b>CANAL</b> Red River (Ord.)	1	Structural	Water Drive Depletion	320-acre spacing units consisting of East half and West half of governmental section. (Order 34-70.)	None
<b>CAT CREEK</b> Kootenai (L. Cret.) (3 sands) Morrison (U. Jur.) Ellis (U. Jur.) Amsden (Penn.)	37 3 2 16 2	Structural-Strat. Structural-Strat. Structural-Strat.	Water Drive Water Drive Depletion- Water Drive	220' from lease or property line, 440' from every other well in same formation. (Order 17-55.) Five separate producing areas, East, Antelope, Mosby, West and Landheim Domes. State-wide.	Three Kootenai, two Ellis, and one Amsden waterflood in progress. (Orders 17-56, 18-59, 13-62, 8-68, 38-70, 11-71.) Water from Third Cat Creek sand. Waterflood modified. (Order 29-74.)
<b>CEDAR CREEK</b> Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	179 60	Structural Structural	Volumetric Volumetric	1200' from legal subdivision line, 2400' from every other well in same formation. (Order 33-54.) 320-acre spacing units. Wells in center of NW¼ and SE¼ of each section with 200' topographic tolerance. (Order 1-61.) Field extension (Order 23-76.)	None None
<b>CHARLIE CREEK</b> Nisku (Dev.) Duperow (Dev.)	1	Structural	Water Drive	320-acre spacing units, either east-west or north-south at option of operator, located no closer than 660' from spacing unit boundary and no closer than 1650' from another producing well. Spacing units may not cross section lines. (Order 66-76.)	None



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
CHELSEA CREEK Nisku (Dev.)	1	Structural	Water Drive	State-wide.	None
CHIP CREEK Eagle-Virgelle (U. Cret.)	1	Structural-Strat	Volumetric	160-acre spacing units. Location no closer than 660' from spacing unit boundary. (Order 89-76.)	None
CLARK'S FORK Frontier (U. Cret.)	1	Structural-Strat.	Depletion	330' from quarter-quarter section line, 1320' between wells with 75' topographic tolerance. (Order 17-54.)	None
CLARK'S FORK, NORTH Lakota (L. Cret.) Gas		Structural-Strat.	Volumetric	160-acre quarter section spacing with location no closer than 660' from spacing unit boundary. (Order 23-75.)	None
CLARK'S FORK, SOUTH Greybull (. Cret.) Oil & Gas (Shut-in)	1	Structural-Strat.	Depletion-Water Drive	160-acre spacing, location no closer than 330' from quarter section line or 1320' from any other well.	None
COAL COULEE Eagle (U. Cret.) Gas	3	Structural-Strat.	Volumetric	State-wide.	None
CONRAD BUTTE Blackleaf (L. Cret.) Bow Island (L. Cret.) Dakota (L. Cret.)	12	Strat.	Volumetric	State-wide.	None
CONRAD, SOUTH Dakota (L. Cret.)		Strat.	Depletion	10-acre spacing units. Wells in center of each unit with 75' topographic tolerance. (Orders 34-62, 31-63.)	None
COW CREEK Charles Miss.)	2	Structural	Water Drive	80-acre spacing units, direction at option of operator but wells to be in SW $\frac{1}{4}$ and NE $\frac{1}{4}$ of each quarter section. (Order 11-69.)	None
COW CREEK, EAST Kibbey (Miss.)	10	Structural	Water Drive	40-acre spacing units consisting of quarter-quarter section with permitted well to be at center with 150' topographic tolerance. (Order 35-74.)	Produced water disposed into Dakota formation. (Order 30-A-75.)
CULBERTSON Red River (Ord.)	1	Structural-Strat.	Depletion-Water Drive	State-wide in part. Unitized as to SE $\frac{1}{4}$ of Section 32, SW $\frac{1}{4}$ of Section 33, N $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 4, and N $\frac{1}{2}$ NE $\frac{1}{4}$ of Section 5. (Order 29-70.)	None
CUPTON Red River (Ord.)	11	Structural-Strat.	Water Drive	160-acre quarter section spacing units. Location no closer than 660' from spacing unit boundary. (Order 4-72.)	None



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>CUT BANK</b>					
Kootenai (L. Cret.) Oil & Gas	805	Strat.	Depletion	(Kootenai formation includes Moulton, Sunburst, and Cut Bank sands.) Oil: 330' from legal subdivision line. 650' between wells in same formation 5-spot on 40-acre tract permitted. 75' topographic tolerance. (Order 10-54.) Gas: 330' from legal subdivision, 2400' between wells in same formation. 75' topographic tolerance. (Order 10-54.) Sections 20, 29, and 32 of Township 36 North, Range 4 West spaced 320-acres (N½ & S½.) (Order 26-70.) 320-acre spacing units for gas from Cut Bank formation, consisting of E½ and W½, located no closer than 330' from unit boundary (Order 46-76.)	There are 18 waterfloods in progress. Water from Eagle and Madison, or produced. Produced water disposed into Madison formation. (Order 22-A-74.)
<b>DARLING</b> (Included as part of Cut Bank Field)					
<b>DEAN DOME</b>					
Greybull (L. Cret.) Gas	1	Structural	Water Drive	State-wide. Oil ring below gas cap.	None
	1				
<b>DEER CREEK</b>					
Interlake (Sil.)	1	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Well location in NE¼ and SW¼ of each quarter section with 75' topographic tolerance. (Orders 23-55 & 14-59.) Commingling of production permitted upon approval of Commission Petroleum Engineer. (Order 18-63.)	Excess produced water is disposed into Dakota and Lakota formations. (Orders 6-56 & 3-58.) Two Silurian wells shut-in.
Red River (Ord.)	4				
	2	Structural	Water Drive		
<b>DELPHIA</b>					
Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
<b>DEVIL'S BASIN</b>					
Heath (U. Miss.)	3	Structural	Depletion	State-wide.	None
<b>DEVON</b>					
Blackleaf (U. Cret.) Gas	23	Strat.	Volumetric	State-wide.	None
Kootenai (L. Cret.) Oil		Strat.	Depletion	State-wide.	None
<b>DEVON, SOUTH</b>					
Bow Island (L. Cret.) Gas	1	Strat.	Volumetric	Drilled on state-wide spacing. Unitized for primary production. (Order 28-71, corrected).	None
	9				
<b>DRY CREEK</b>					
Eagle (U. Cret.) Gas	1	Structural-	Volumetric	State-wide.	None
Judith River (U. Cret.)	1	Strat.		Field re-delineated. (Order 8-70.)	
Frontier (U. Cret.) Gas	7	Structural	Volumetric	Six additional gas storage wells, west end of structure.	
Greybull (L. Cret.) Gas	3	Structural-	Volumetric-		
Greybull (L. Cret.) Oil	1	Strat.	Depletion		
<b>DRY CREEK MIDDLE</b>					
Frontier (U. Cret.) Gas	1	Structural-	Volumetric	320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option with permitted well no closer than 660' from spacing boundary (Order 25-75.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>DWYER</b> Ratcliffe (Miss.)	10 4 (Shut-in)	Structural-Strat.	Water Drive-Volumetric	160-acre spacing units; well location in center of SE 1/4 of spacing unit with 175' topographic tolerance. (Orders 25-60, 29-61.)	Produced water disposed into Dakota formation. (Order 26-63.) Waterflood. (Order 20-68.)
<b>EAST KEITH &amp; KEITH</b> Bow Island (L. Cret.) Gas	7	Structural	Water Drive	State-wide, except unitized portions spaced by (Order 22-62). Pooling (Order 19-66.)	None
Sawtooth (Jur.) Gas	5				
<b>ELK BASIN (Mont. Portion)</b> Frontier (U. Cret.)	13 7 (Shut-in)	Structural	Gravity Drainage	Rule No. 203 (Spacing) is waived within Unit Area. (Order 10-61.) Gas to Elk Basin gasoline plant.	Frontier: Water injection. (Order 1-72.) Embar - Tensleep; pressure maintenance by crestal gas injection. Waterflood approved in 1966. (Order 5-66.) Madison: Water injection (Order 17-61.)
Embar-Tensleep (Perm., Penn.) Oil and Gas	15 13 (Shut-in)	Structural	Gravity Drainage		
Madison (Miss.)	21	Structural	Water Drive		
<b>ELK BASIN, NORTHWEST</b> Frontier (U. Cret.)	1 6 (Shut-in)	Structural	Depletion	Spacing waived within unitized portion except that bottom of hole be no closer than 330' from unit boundary and there be at least 1320' surface distance between wells in same formation; 75' topographic tolerance. (Orders 43-63, 28-64.) Gas to Elk Basin gasoline plant.	Frontier: Waterflood in progress. Embar - Tensleep: Waterflood. (Order 3-67.) Madison, produced water.
Embar-Tensleep (Perm., Penn.) Oil and Gas	3	Structural	Gravity Drainage		
Madison (Miss.)	1 2 (Shut-in)	Structural	Water Drive		
<b>EHTRIDGE AREA</b> Bow Island (L. Cret.) Gas	3	Strat.	Water Drive	State-wide.	None
Swift (U. Jur.) Gas	5 1 (Shut-in)	Strat.	Water Drive	State-wide, except two wells by (Order 28-65.)	
<b>FAIRVIEW</b> Winnipegosis (Dev.) Oil & Gas Red River (Ord.) Oil & Gas	1 8	Structural-Strat.	Water Drive Water Drive	160-acre spacing unit. Well location anywhere in spacing unit but no closer than 660' from unit boundary. (Order 48-65, 1-67, 43-67, 44-67.) Gas to Fairview plant.	Northwest part of field unitized for gas injection. Gas from Fairview and Brorson fields. (Order 11-70.) Salt water disposal into Dakota. (Orders 9-A-71, 24-A-71.)
<b>FERTILE PRAIRIE</b> Red River (Ord.)	2	Structural-Strat.	Water Drive	80 acre spacing units consisting of north-south rectangular units. Well location in NW 1/4 and SE 1/4 of quarter section with 75' topographic tolerance. (Orders 3-56, 7-62.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>FLAT COULEE</b>					
Bow Island (L. Cret.) Gas	3	Structural	Depletion	330' from boundary of legal subdivision and 1320' from other wells in same reservoir. (Order 16-55.)	Waterflood unit and redelineation approved for Swift sandstone. (Orders 13-71, 17-A-71, 22-71.)
Dakota (L. Cret.) Gas	1 (Shut-in)	Strat.	Depletion	State-wide, exception (Order 11-66.)	
Swift (Jur.) Gas	1 (Shut-in)	Strat.	Depletion	State-wide gas spacing.	
Swift (Jur.) Oil	20	Strat.	Depletion	40-acre spacing units. Well in center of spacing unit with 150' topographic tolerance. (Orders 16-62, 19-63.)	
Sunburst (L. Cret.) Gas	1 (Shut-in)	Strat.	Depletion	State-wide.	
Sawtooth (Jur.) Gas	1 (Shut-in)	Strat.	Depletion		
<b>FLAT LAKE</b>					
Nesson (Miss.)	1	Strat.	Partial Water Drive	160-acre spacing units; well location in center of NE 1/4 of quarter section with 200' topographic tolerance. Wells no closer than 961' to North Dakota state line and no closer than 1600' to Canadian line. (Orders 10-65 amended, 43-65, 23-66, 33-66.)	Excess salt water disposed into Muddy, Dakota, or Lakota formations. (Orders 39-64, 39-66.) Unit operation for eastern part of field. (Order 7-71.) Unit operation for western part of field. (Order 32-74.)
Ratcliffe (Miss.)	49	Structural-Strat.	Partial Water Drive		
<b>FLAT LAKE, SOUTH</b>					
Ratcliffe (Miss.)	2	Structural-Strat.	Partial Water Drive	Same as Flat Lake spacing. (Order 2-67.)	Excess salt water disposed into Muddy, Dakota, or Lakota. (Order 19-67.)
<b>FOUR MILE CREEK</b>					
Red River (Ord.)	3	Strat.	Depletion	320-acre spacing units. (Order 43-75.)	None
<b>FRANNIE (Mont. Portion)</b>					
Tensleep (Penn.)	1	Structural	Comb. Water Drive and Gravity Drainage	10-acre spacing units; well location in center of each unit with 100' topographic tolerance. (Order 35-63.)	Unitized for waterflood of Phosphoria-Tensleep formations using produced fluids. (Order 21-70.)
<b>FRED &amp; GEORGE CREEK</b>					
Sunburst (L. Cret.) Oil & Gas	15	Strat.	Depletion	Oil: 40-acre spacing units; well location in center of unit with 250' topographic tolerance. (Orders 29-63, 1-65.)	Sunburst waterflood initiated July, 1970, using water from Madison. (Order 13-70) and Eagle water. (Order 27-71.)
Swift (U. Jur.) Oil & Gas	2 (Shut-in)	Strat.	Depletion	State-wide.	None
<b>FRESNO</b>					
Eagle-Virgelle (U. Cret.)	4	Structural-Strat.	Volumetric	640-acre spacing units; well located no closer than 990' from unit boundary. One well may be drilled within each spacing unit for each production horizon within the spacing unit. (Order 14-76.)	None
<b>FROID, SOUTH</b>					
Red River (Ord.)	1	Structural-Strat.	Depletion	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>FT. GILBERT</b> Red River (Ord.)	2 (Shut-in)	Structural-Strat.	Depletion	State-wide.	None
<b>GAGE</b> Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
<b>GAS CITY</b> Red River (ord.)	15	Structural	Depletion-Water Drive	80-acre spacing units consisting of E $\frac{1}{2}$ and W $\frac{1}{2}$ of quarter sections; well location in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of quarter section; 150' topographic tolerance. Spacing waived and state-wide Rules 213 (Deviation), 218 (Commingle) and 219 (Dual Completion) are waived in unitized portion of field. (Order 29-62.)	Excess produced water disposed into Judith River formation. (Orders 32-61, 20-64.) Water-flood using produced water and Madison water. (Order 16-69.)
<b>GIRARD</b> Red River (Ord.) Interlake (Sil.)	1 1	Structural-Strat.	Depletion-Water Drive	State-wide.	None
<b>GLENDAVE</b> Red River (Ord.) Oil & Gas	14 (Shut-in)	Structural-Strat.	Depletion-Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; wells located in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Orders 27-55, 19-62, 58-62, 20-66.)	Excess produced water disposed into Swift, Dakota and Judith River formations. (Orders 16-56, 16-63, 40-A-70.)
<b>GOLD BUTTE</b> Bow Island (L. Cret.)	1 (Shut-in)	Structural	Water Drive?	640-acre spacing, well location any quarter-quarter section cornering on center of section. (Order 26-59.)	None
Swift (U. Jur.) Gas	1 (Shut-in)	Structural	Water Drive?		
<b>GOLDEN DOME</b> Eagle (U. Cret.) Gas	2 (Shut-in)	Structural-Strat.		160-acre spacing; 660' from spacing unit boundary.	None
<b>GOOSE LAKE</b> Ratcliffe (Miss.) Oil & Gas	19 (Shut-in)	Structural-Strat.	Partial Water Drive	Unitized. (Order 17-72.)	Excess produced water disposed into Mission Canyon and Dakota formations. (Orders 12-64, 14-66, 12-68.)
<b>GRABEN COULEE</b> Sunburst (L. Cret.)	1 (Shut-in)	Structural-Strat.	Depletion	40-acre spacing units; well location no closer than 330' from legal subdivision.	None
Cut Bank (L. Cret.)	31 (Shut-in)	Structural-Strat.	Depletion	(Cut Bank and Madison) Oil: 330' from boundary of legal subdivision and 650' from any other well in same reservoir and on same lease. 75' topographic tolerance. (Order 73-62.)	
Cut Bank-Madison (Dual	6 3	Structural-Strat.	Depletion		



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>GRANDVIEW</b>					
Bow Island (L. Cret.) Gas (2 Zones)	5	Structural	Unknown	320-acre spacing units aligned in a north-south direction; well locations no closer than 660' to a spacing unit boundary. (Order 49-67.) Dual completion with Bow Island.	None
Madison (Miss.) Gas	1	Structural	Unknown		
Swift (U. Jur.) Oil	1	Structural	Unknown		
<b>GUMBO RIDGE</b>					
Tyler (L. Penn.)	6	Structural- Strat.	Unknown	State-wide.	None
<b>GYPSY BASIN</b>					
Sunburst (L. Cret.) Oil & Gas	4	Structural- Strat.	Comb. Water Drive and Completion	330' from lease lines and 660' between wells in same formation. Only two wells per quarter-quarter section. Order 7-66.)	Order 6-64 permits injection of excessive gas (produced with oil) into the Sunburst gas cap.
Swift (U. Jur.)	1 (Shut-in)	Structural- Strat.	Comb. Water Drive and Depletion	Same as Sunburst	
<b>HARDIN</b>					
Sawtooth-Madison (Jur. & Miss.) Oil & Gas	2 (Shut-in)	Structural- Strat.	Comb. Water Drive and Completion	(Sawtooth-Madison) Oil: 40-acre spacing units; wells no closer than 330' from lease line. (Order 7-66.) (Sawtooth- Madison) Gas: 160-acre spacing units; well locations in center of any quarter-quarter section in each 160-acre unit, 2340' between gas wells. 150' topographic tolerance. (Order 13-59.)	None
Frontier (U. Cret.) Gas	17 31 (Shut-in)	Strat.	Volumetric	State-wide.	Water disposal into Red River. (Order 20-A-70.)
<b>HAVRE</b>					
Eagle (U. Cret.)	1	Structural- Strat.	Water Drive Depletion	State-wide. Single well used in town of Havre.	
<b>HAY CREEK</b>					
Mission Canyon (Miss.)	1	Structural	Depletion	State-wide.	None
Red River (Ord.)	1 1 (Shut-in)	Structural	Volumetric Water Drive	320-acre spacing, any two adjacent quarter sections, direction to be determined by operator. Location no closer than 660' from unit boundary. (Orders 15-69, 27-73.) Gas to Bronson plant.	
<b>HAYSTACK BUTTE</b>					
Eagle-Virg. (U. Cret.)					
Bow Island (L. Cret.)	6 (Shut-in)	Structural- Strat.	Volumetric	640-acre spacing units; one well per each producing horizon above Kootenai. Location no closer than 990' from spacing unit boundary. (Order 85-76.)	None
Kootenai (L. Cret.)					
<b>HIAWATHA</b>					
Tyler (L. Penn.) (2 sands)	4	Structural- Strat.	Depletion	State-wide.	None



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>HIBBARD</b> Amsden (Penn.)	1	Unknown	Water Drive	State-wide.	None
<b>HIGHVIEW</b> Madison (Miss.) Oil & Gas	1	Structural	Water Drive	160-acre spacing units, located no closer than 660' from spacing unit boundary. 150' topographic tolerance. (Order 84-76.)	None
<b>HORSE CREEK</b> Swift (U. Jur.)	1	Structural	Water Drive	State-wide.	None
<b>HOWARD COULEE</b> Tyler (L. Penn.)	1 (Shut-in)	Structural-Strat.	Unknown	State-wide.	None
<b>INJUN CREEK</b> Tyler (Penn.) Abandoned	0	Strat.	Depletion	State-wide.	None
<b>IVANHOE</b> Morrison (U. Jur.)	2 (Shut-in)	Structural-Strat.	Depletion	40-acre spacing unit for production from any one common formation; well location in center of unit with 200' topographic tolerance. (Order 7-60 and 9-56.)	Waterflood of Tyler B & C sands discontinued.
Amsden (L. Penn.)	1	Structural-Strat.	Water Drive		
Tyler (L. Penn.)	8	Structural-Strat.	Depletion		
<b>JIM COULEE</b> Tyler (L. Penn.)	17	Structural Strat.	Depletion Water Drive	Unitized (Order 18-72.) No well closer than 330' from unit boundary.	Waterflood; produced and Third Cat Creek water.
<b>KEG COULEE</b> Tyler (Penn.) Oil & Gas	18 (Shut-in)	Strat.	Depletion	40-acre spacing in southwest portion of field except that spacing is waived in unitized portion. (Orders 3-64, 4-64, 23-64.) 80-acre spacing in remainder of field with variable pattern. (Orders 11-60, 28-62.) (40-acre spacing: W½ E½ and W½ Sec. 35-11N-30E; NW¼ Sec. 2-10N-30E). (Order 23-72.) Topographic tolerance varies from 100' to 250'. (Orders 11-60, 4-64, 23-64.) Buffer zone waived. (Order 16-65.) Field Reduction (Order 2-76.)	Three waterflood units. (Orders 3-64, 28-66, 10-69, 14-69.) Madison water injected.
<b>KEG COULEE, NORTH</b> Tyler (Penn.)	3	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 150' topographic tolerance. (Order 46-64.) Buffer zone waived. (Order 16-65.)	None
<b>KEITH</b> (see East Keith)					
<b>KELLEY</b> Tyler (Penn.)	3	Strat.	Depletion	State-wide, 250' topographic tolerance. (Order 15-67.)	Waterflood using Third Cat Creek water. (Order 8-69.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>KEVIN-SUNBURST</b>					
Sunburst (L. Cret.) Oil & Gas	51	Strat	Depletion	9 wells per 40-acre tract; only 3 wells on any side of tract set back at least 220' from line. Field delineated by (Orders 8-54, 28-55.) (Estimated 400 wells shut-in.)	There are five waterfloods in operation, using Madison water. (Orders 9-64, 17-64, 30-64, 36-65, 29-71.)
Swift (U. Jur.)	?	Structure			
Sun River (Miss.) Oil & Gas	468 12	Structure-Strat.	Depletion		
Gas only (Shut-in)	?				
Nisku (Dev.) Gas	1			640-acre spacing units; location no closer than 990' from spacing unit boundary. (Order 83-76.)	None
<b>KICKING HORSE</b>					
Bow Island (L. Cret.)	3	Structural	Depletion	320-acre spacing with location permitted no closer than 660' from unit boundary and 990' from field boundary. (Order 17-74.) One 640-acre unit. (Order 17-74.)	None
Sawtooth (Jur.) Gas	4				
<b>KINYON COULEE</b>					
Bow Island (L. Cret.)	4	Structural-Strat.	Volumetric	State-wide.	None
<b>LAIRD CREEK</b>					
Swift (U. Jur.) Oil & Gas	10 2	Strat.	Depletion	State-wide. One shut-in gas well.	Unitized and waterflood authorized in Swift for oil production. (Order 25-74.)
(Shut-in)					
<b>LAKE BASIN</b>					
Telegraph Creek ? U. Cret. O Gas	8	Structural-Strat.	Volumetric	160-acre spacing units to base of Virgelle; wells no closer than 660' from unit boundary and 990' from field boundary. Commingling permitted after administrative approval. (Order 9-74.) Gas from Telegraph Creek pooled. (Order 29-75.)	None
Virgelle (U. Cret.) Gas					
<b>LAKE BASIN, NORTH</b>					
Eagle, Frontier (U. Cret.) Gas	2	Structural	Unknown	640-acre spacing units consisting of one section. Locations 990' from section line. (Order 3-74.)	None
Claggett (Shut-in)	2				
Eagle-Virg. (U. Cret.) Gas	1	Structural	Unknown	160-acre spacing units located no closer than 660' from quarter section lines within restricted Sections. (Order 63-76.)	None
<b>LANDSLIDE BUTTE</b>					
Sun River (Miss.)	1 2	Unknown	Water Drive	State-wide.	None
(Shut-in)					
<b>LAREDO</b>					
Eagle (U. Cret.)	21	Unknown	Depletion	320-acre spacing with unit consisting of one-half section lying N-S or E-W at operator's option after administrative approval. Well no closer than 990' from unit boundary. (Order 8-74.)	None
Judith River (U. Cret.)	1				

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>LEARY</b> Muddy (L. Cret.)	2 (Shut-in)	Structural-Strat.	Depletion	80-acre spacing with locations in NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section, 200' topographic tolerance. (Order 12-69, 19-70.)	None
<b>LEROY</b> Judith River-Eagle Virgelle (U. Cret.) Gas	24 (Shut-in)	Unknown	Depletion	320-acre spacing with unit consisting of one-half section lying N-S or E-W at operator's option after administrative approval. Well no closer than 660' from unit boundary and 990' from field boundary. (Order 19-75.)	None
<b>LISCOM CREEK</b> Shannon (U. Cret.) Gas	7	Structural-Strat.	Depletion	Spacing, one well per 640 acres, with location no closer than 990' from section boundary. (Order 20-72.)	None
<b>LITTLE BEAVER (Mont. Portion)</b> Red River (Ord.)	23 (Shut-in)	Structural	Comb. Depletion and Water Drive	Spacing waived and General Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 41-62.)	Waterflood of the Red River was commenced in August, 1967. (Order 3-66.) Minnelusa water.
<b>LITTLE BEAVER, EAST</b> (Montana Portion) Red River (Ord.)	9	Structural	Comb. Depletion and Water Drive	Same as for Little Beaver. (Order 42-62.)	Waterflood of the Red River was commenced in April, 1965. (Order 33-64.)
<b>LITTLE WALL CREEK</b> Tyler (Penn.)	13 (Shut-in)	Strat.	Depletion Water Drive	State-wide.	None
<b>LODGE GRASS</b> Tensleep (Penn.)	1	Structural-Strat.	Water Drive	160-acre spacing units; well locations vary according to areas; 250' topographic tolerance. (Orders 26-64, 26-65.)	None
<b>LONE BUTTE</b> Red River (Ord.)	2	Structural	Unknown	320-acre spacing units with well location at least 660' from unit boundary. Not delineated.	None
<b>LONETREE CREEK</b> Red River (Ord.)	6 (Shut-in)	Structural	Depletion	320-acre spacing, wells 660' from spacing boundary, 2000' between wells. (Order 29-72.)	None
<b>LONG CREEK</b> Madison (Miss.) Charles	1	Structural	Water Drive	State-wide spacing.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>LOOKOUT BUTTE</b> (Includes Coral Creek Unit) Madison (Miss.)	3	Structural	Water Drive	State-wide spacing.	Water disposal into Madison. (Order 68-62.)
Interlake, Red River (Sil.-Ord.)	28	Structural	Comb. Depletion and Water Drive	160-acre spacing; well location in center of SE¼ of each quarter section with 150' topographic tolerance. (Order 21-62.) Coral Creek Unit not subject to spacing rules. Redelineated per (Order 7-63.)	Waterflood of Silurian-Ordovician approved in 1966. (Order 35-66.) Water from Minnelusa.
<b>MASON LAKE</b> Lakota (L. Cret.)	2	Structural	Water Drive	State-wide.	None
<b>MELSTONE</b> Tyler (Penn.)	3 1 (Shut-in)	Structural-Strat.	Depletion	State-wide.	None
<b>MIDDLE BUTTE</b> Bow Island (Cret.)	2	Structural	Volumetric	320-acre spacing units consisting of E½ & W½ of each section; well location in center of either of the inside quarter-quarter sections located in E½ of each spacing unit. 75' topographic tolerance. (Order 3-60.) Re-delineated. (Order 21-75.)	None
<b>MINERAL BENCH</b> Duperow (Dev.)	1	Structural	Water Drive	State-wide.	Water disposal into Dakota-Lakota per (Order 18-65.)
<b>MINERS COULEE</b> Sunburst (L. Cret.) Swift (U. Jur.) Madison (Miss.) Sunburst-Swift Gas Sawtooth (M. Jur.)	2 3 1 1 1 (Shut-in) (Shut-in) (Shut-in) (Shut-in)	Strat. Strat. Strat. Strat. Strat.	Depletion Depletion Water Drive Depletion	Oil: 40-acre units consisting of quarter-quarter sections; well location no closer than 330' from lease or property line and 660' from any other well. (Order 9-66.) Order 9-66 amended to comply with Order 5-74. Gas: 160-acre spacing with wells 990' from unit boundary. (Order 5-74.) Sawtooth gas spacing unit. (Order 43-76.)	None
<b>MONARCH</b> Mission Canyon (Miss.)	2	Structural-Strat.	Water Drive	80-acre spacing units consisting of east and west half of quarter section. Well location in SW¼ and NE¼ of quarter section. Location within 660' square at center of quarter section. (Order 18-61.)	Produced water is disposed into the salt water disposal system for the Pennel Field.
Interlake, Red River (Sil.-Ord.)	9	Structural-Strat.		160-acre spacing units consisting of a quarter section; well location in center of SW¼ of each quarter section with 175' topographic tolerance. (Orders 12-59, 4-63.)	Waterflood initiated 12-1-73. (Order 23-73.)
<b>MOSBY</b> (See Cat Creek)	3 4 (Shut-in)	Structural-Strat.	Water Drive	Listed as part of Cat Creek.	Waterflood, 2nd Cat Creek sand. (Order 8-68.) Water-flood in Amsden. (Order 11-71.)



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>MOSSER</b> Greybull (L. Cret.)	10 (Shut-in)	2 Structural	Water Drive	Spacing waived. Future development requires administrative approval of the Commission. (Order 27-62.)	None
<b>MT. LILLY</b> Madison (Miss.) Gas	3	Structural	Water Drive	640-acre spacing, well location in approximate center of any of the four quarter-quarter sections adjoining center of section; 250' topographic tolerance. (Order 37-63.)	None
<b>MUD CREEK</b> Amsden (L. Penn.)	2	Structural	Water Drive	640-acre spacing unit. Well location anywhere in 160-acre tract in center of each 640-acre well spacing unit (Order 9-63.)	None
<b>NOHLY</b> Red River (Ord.)	2	Structural	Volumetric Water Drive	State-wide.	None
<b>NORTH FORK</b> Red River (Ord.)	1	Structural	Water Drive	State-wide.	None
<b>NORTH GILDFORD</b> Sawtooth (M. Jur.)	1 (Shut-in)	Structural	Unknown	320-acre specified spacing units. One well per unit 660' from boundary, 2640' between wells. (Order 9-58.) Boundary reduction (Order 38-76.)	None
<b>NORTH LAKE BASIN</b> (See Lake Basin, North)					
<b>NORTH WILLOW CREEK</b> (See Willow Creek, North)					
<b>OTIS CREEK</b> Red River (Ord.)	2	Structural	Depletion	State-wide.	None
<b>OTIS CREEK, SOUTH</b> Red River (ord.)	2	Structural	Depletion	State-wide.	None
<b>OUTLOOK</b> Duperow (Dev.)	1 (Shut-in)	Structural-Strat.	Water Drive	State-wide.	Produced water is disposed into Dakota and Siluro - Devonian formations. (Orders 16-59, 17-65, 36-66.)
Winnipegosis (Dev.)	3	Structural-Strat.	Water Drive	State-wide.	
Silurian-Devonian	3 (Shut-in)	Structural-Strat.	Water Drive	160-acre spacing units; well location in center of either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ of each quarter section; 175' topographic tolerance. (Order 19-59A.)	
<b>OUTLOOK, SOUTH</b> Winnipegosis (Dev.)	1	Structural	Water Drive	160-acre spacing; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ of quarter section; 175' topographic tolerance. (Order 19-59A.) Commingling permitted. (Order 45-64.)	Produced water disposed into Muddy and Dakota formations. (Orders 19-59, 17-65.)



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>OUTLOOK, WEST</b> Winnipegosis (Dev.)	2	Structural	Water Drive	160-acre spacing units consisting of quarter sections; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ with a tolerance of 175'. (Order 7-67.)	Produced water disposed into Dakota formation. <sup>1</sup> (Order 42-66.)
<b>PENNEL</b> Mission Canyon (Miss.)	8	Structural	Depletion-Water Drive	80-acre spacing units consisting of east and west half of quarter section; wells located in center of SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of quarter sections with 150' topographic tolerance. (Order 15-61.)	Produced water is being injected into Dakota, Siluro-Ordovician and Madison formations. (Orders 16-60, 46-62, 68-62, 36-63, 13-64.) Waterflood for Siluro-Ordovician approved Nov. 1968. (Order 24-68.)
Siluro-Ordovician Oil & Gas	106	Structural	Depletion-Water Drive	80-acre spacing units on west side and 160-acre spacing units on east side of pool. Wells to be located in SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of each quarter section (80 acres) and in SE $\frac{1}{4}$ of each quarter section on 160-acre spacing. (Orders 1-56, 8-56, 15-61, 20-62, 4-63, 7-63.) Commingling approved. (Order 59-62.)	
<b>PINE</b> Mission Canyon (Miss.) Oil & Gas	2	Structural	Water Drive	Spacing and General Rules 213, 218 and 219 are waived within the Pine Unit. 80-acre spacing units outside of unit area; well location in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of quarter section; 150' topographic tolerance. (Order 37-62.) Gas through extraction plant.	A waterflood program for the south area was started in 1959. A waterflood of the north area was approved in 1967. (Orders 13-68, 1-60, 8-62, 32-67.) Produced water injected into Mission Canyon. (Order 10-A-74.)
Siluro-Ordovician Oil & Gas	99	Structural	Depletion-Water Drive		
<b>PLEVNA</b> Judith River (U. Cret.) Gas	19 1	Structural	Water Drive	1200' from legal subdivision line; 2400' from other wells on same lease or unit; 75' topographic tolerance. (Orders 34-54, 4-57.)	None
(Shut-in)					
<b>PONDERA</b> Sun River (Miss.) Oil & Gas	292	Structural-Strat.	Depletion-Water Drive	Oil: 220' from legal subdivision, 430' from other wells in same reservoir on same lease; 75' topographic tolerance. Porter Bench Extension: 330' from legal subdivision line; 650' from other wells in same reservoir on same lease or unit; 75' topographic tolerance. (Order 9-54.) Gas: 1320' from legal subdivision; 3700' from other wells on same lease or unit; 75' topographic tolerance. (Order 9-54.) General Rules 207, 211, 219, 221, 223, and 224 do not apply.	Produced water injected into lower Madison. (Orders 11-56, 15-56, 4-65, 4-66, 20-A-71.) A small waterflood project has been in operation since 1959, using Madison water.
<b>POLICE COULEE</b> Bow Island (L. Cret.)	2	Structural	Depletion	320-acre spacing units; location no closer than 990' from section line and 660' from half section lines. Spacing units to consist of north half or south half, east half or west half at discretion of operator. (Order 53-76.)	None
(Shut-in)					
<b>PONDERA COULEE</b> Sun River (Miss.)	4	Structural	Water Drive	330' from legal subdivision lines or upon a 10-acre spacing pattern; 75' topographic tolerance. (Order 5-62.)	None
(Shut-in)					

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>POPLAR, EAST</b>					
Madison (Miss.) (Charles & Mission Canyon fms.)	57	Structural	Water Drive	State-wide spacing; field delineated by (Order 7-55.) Re-delineation of field (Order 25-76.)	Unitized in 1955. (Order 7-55.) Excess produced water has been injected into the Dakota Judith River, and Mission Canyon formations. (Orders No. 1-55, 5-57, 7-57, 14-61, 21-61, 34-61, 10-62, 51-67, 10-A-73.)
Heath (Tyler) (Penn.)	3	Structural-Strat.	Water Drive		
Nisku (Dev.)	1	Structural	Water Drive		
<b>POPLAR NORTHWEST</b>					
Charles (Miss.) ("B" & "C" or McGowan Zone)	11	Structural	Water Drive	80-acre spacing units for all zones in Charles formation consisting of E½ and W½ of each quarter section; permitted wells in NW¼ and SE¼ of quarter section except for certain specified spacing unit tracts (orders 18-55 & 26-76.) Commingling approved. (Order 26-76.)	None
<b>PRAIRIE DELL</b>					
Bow Island (L. Cret.) Gas Swift (U. Jur.) (Dual) Gas	3 5	Structural-Strat.	Depletion	320-acre spacing units with well location no closer than 660' from spacing unit boundary. (Order 10-76.)	None
<b>PRAIRIE ELK</b>					
Charles "C" (Miss.) (Shut-in)	1 1	Unknown	Water Drive	State-wide.	None
<b>PRICHARD CREEK</b>					
Sunburst (L. Cret.) Oil & Gas (Shut-in)	5 3	Strat.	Depletion	Well locations subject to administrative approval.	None. Unitized as to Sunburst for water injection. (Order 7-73.)
<b>PUMPKIN CREEK</b>					
Shannon (U. Cret.) Gas (Shut-in)	3 5	Strat. Strat.	Depletion	State-wide. Delineated. (Order 10-71.)	None
<b>PUTNAM</b>					
Interlake (Sil.)	1	Structural	Volumetric Water Drive	State-wide.	None. Gas to McCulloch Gas Processing Corp. Brorson Plant.
Red River (Ord.)	1	Structural	Volumetric Water Drive		
<b>RABBIT HILLS</b>					
Sawtooth (Jur.)	4	Structural Strat.	Volumetric Water Drive	160-acre spacing unit. Well location 660' from spacing unit boundary. (Orders 17-73, 34-74, 33-76.) Re-delineation (Order 47-76.)	Produced water disposed into Eagle formation.
<b>RAGGED POINT</b>					
Tyler (Penn.)	23	Strat.	Depletion	40-acre spacing units; 75' topographic tolerance. (Order 8-59.) Spacing waived for Tyler "A" sand reservoir within Tyler "A" Sand Unit except no well can be closer than 660' to Unit Boundary. (Order 35-65.)	A waterflood project of the Tyler "A" sand was commenced in February, 1966, using Third Cat Creek water. (Order 35-65.)
Kibbey (Miss.)	0 Plugged	Structural	Water Drive	State-wide spacing. (Order 15-54.) Commingling of production from Tyler and Kibbey permitted in one well per (order 11-65.)	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>RAPELJE</b> Claggett, Eagle, Judith River, Virgelle (U. Cret.)	15 1	Structural- Strat.	Water Drive	160-acre spacing. Wells no closer than 990' to unit boundary. Commingling after administrative approval. (Order 29-73.)	None
<b>RATTLER BUTTE</b> Tyler (Penn.)	2	Strat.	Depletion	State-wide.	None
<b>RATTLESNAKE COULEE</b> Sunburst (L. Cret.) Oil & Gas	1	Strat.	Depletion	State-wide.	None
Bow Island (L. Cret.) Gas	1 (Shut-in)				
<b>RAYMOND</b> Duperow (Dev.) Nisku-Winnepegosis (Dev.) Dual Winnepegosis (Dev.)	1 1 2	Structural- Strat.	Depletion Water Drive	320-acre spacing units. Wells 660' from spacing unit boundary. (Order 38-72.)	Produced water injected into Dakota formation. (Order 39-A-74.)
<b>RAYMOND, NORTHEAST</b> Winnepegosis (Dev.) (Dual) Red River (Ord.)	1	Structural- Strat.	Depletion Water Drive	160-acre spacing units. Wells 660' from spacing unit boundary. (Order 12-74.)	None
<b>REAGAIN</b> Sun River (Miss.) Oil Gas	53 11 5	Structural	Gas Cap- Water Drive	State-wide. (Order 17-54.)	A pressure maintenance project utilizing gas injection was started in 1961. (Order 21-60.) Water-flood. (Order 27-72.)
<b>REAGAN, WEST</b> Blackleaf (L. Cret.) Gas	10	Strat.	Depletion	State-wide. Injected into Reagan field as secondary recovery agent.	None
Bow Island (L. Cret.) Oil	1 (Shut-in)	Structural- Strat.	Volumetric		
<b>RED CREEK</b> Cut Bank (L. Cret.) Oil & Gas	7	Strat.	Depletion	40-acre spacing units; wells in center of spacing unit with 75' topographic or obstruction tolerance; spacing and field rules waived for unitized portion. (Orders 16-58, 73-62, 31-64, 5-70.)	Excess produced water injected into Bow Island and Madison. (Orders 22-63, 37-64.) A water-flood project in the Cut Bank sand was initiated in June, 1965, using Madison water.
Sun River (Miss.) Oil & Gas	2 12 9	Structural	Water Drive		
<b>RED FOX</b> Nisku (Dev.)	1	Structural	Water Drive	Field consists of one 160-acre spacing unit which straddles the section line. (Order 20-67.)	None
<b>REDSTONE</b> Winnepegosis (Dev.)	1 1 (Shut-in)	Unknown	Water Drive	One well per 160-acre unit, but no closer than 660' from unit boundary.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>REPEAT</b> Red River (Ord.)	1	Unknown	Water Drive	State-wide.	None
<b>RESERVE</b> Winnipegosis (Dev.)	(Shut-in)	1	Structural- Strat.	160-acre spacing units; permitted well within 1320' square in center of quarter section. Commingling of Red River and Interlake production permitted on individual well basis. (Orders 34-66, 27-67.)	Excess water injected into Dakota sand. (Order 23-A-67.)
Interlake (Ord.)	(Shut-in)	1	Structural- Strat.		
Red River (Ord.)	(Shut-in)	3	Structural- Strat.		
<b>RICHEY</b> Charles (Miss.)	2	Structural	Water Drive	State-wide.	Original 80-acre spacing revoked. (Order 11-73.)
<b>RICHEY, SOUTHWEST</b> Interlake, Dawson Bay (Sil.) (Dev.)	(Shut-in)	5	1	Structural	A waterflood project in the Interlake and Dawson Bay was started in 1965. (Order 34-65.)
<b>RIPRAP COULEE</b> Ratcliffe (Miss.)	2	Structural- Strat.	Depletion	State-wide.	None
<b>ROSCOE</b> Lakota (L. Cret.)	1	Structural	Water Drive	State-wide.	None
<b>ROSEBUD</b> Tyler (L. Penn.)	5	Structural- Strat.	Unknown	State-wide	None
<b>ROUGH CREEK</b> Muddy (L. Cret.)	1	Structural Strat.	Depletion	State-wide. Formerly called Duncan Creek.	None
<b>RUDYARD</b> Sawtooth (M. Jur.) Gas	3	Structural	Volumetric	640-acre spacing units consisting of one section; well location in center of NW <sup>1</sup> / <sub>4</sub> of section with 75' topographic tolerance. (Order 2-58.) Field boundaries reduced. (Order 39-76.)	None
<b>RUSH MOUNTAIN</b> Winnipegosis (M. Dev.) Red River (Ord.)	1	Structural	Volumetric- Water Drive	State-wide. Dual zone completion in discovery well.	Excess water injected into Dakota sand. (Order 5-A-71.)
<b>SALT LAKE</b> Bakken-Nisku (Miss.-Dev.)	3	Structural	Water Drive	State-wide.	None



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>SAND CREEK</b> Interlake, Red River (Sil.) (Ord.)	4 (Shut-in) 2	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Wells located in center of NW 1/4 and SE 1/4 of each quarter section. (Order 16-59.) Commingling of production from Interlake and Red River authorized per (Order 49-62.)	Excess produced water is injected into the Swift formation. (Order 9-61.)
<b>SAWTOOTH MOUNTAIN</b> Judith River (U. Cret.) Eagle (U. Cret.)	5 (Shut-in) 19 (Shut-in) 1	Structural-Strat.	Volumetric Water Drive	640-acre spacing units; one well per section per formation, location to be not less than 990' from governmental section line. (Order 45-76.)	None
<b>SECOND CREEK</b> Red River (Ord.)	3	Structural	Volumetric Water Drive	State-wide.	None
<b>SHEEPHERDER</b> Tyler (L. Penn.)	3	Structural-Strat.	Unknown	State-wide.	None
<b>SHELBY AREA</b> Sunburst (L. Cret.) Gas Swift (Jur.) Gas	33	Structural-Strat.	Depletion	State-wide. Field outline not delineated. A few small Swift sand wells commingled with Sunburst.	None
<b>SHERARD</b> Eagle (U. Cret.) Gas Judith River (U. Cret.) Dual	9 (Shut-in) 6 1	Structural-Strat.	Volumetric Water Drive	640-acre spacing units; 990' from section line. (Order 1-74.)	None
<b>SHERRARD WEST</b> Eagle, Virgelle (U. Cret.)	1	Structural-Strat.	Volumetric Water Drive	160-acre spacing units; location no closer than 660' to unit boundary. (Order 90-76.)	None
<b>SHOTGUN CREEK</b> Ratcliffe (Miss.)	1 (Shut-in)	Structural	Water Drive	State-wide.	None
<b>SIDNEY</b> Mission Canyon (Miss.)	1 (Shut-in)	Structural	Water Drive	State-wide.	None
<b>SIoux PASS</b> Interlake (Sil.) Red River (Ord.) Mission Canyon (Miss.)	3 Dual 1 1	Structural	Volumetric Water Drive	320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from unit boundary. (Interlake and Red River). 160-acre spacing unit (Mission Canyon) with well no closer than 660' from unit boundary. Commingling of Interlake and Red River production authorized. (Order 10-75.)	Excess water injected into Dakota formation. (Order 15-A-75.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>SIOUX PASS, MIDDLE</b> Red River (Ord.)	2	Structural	Water Drive	320-acre spacing units to consist of two contiguous governmental quarter sections at operator's option. Location to be no closer than 660' from exterior boundary of unit and no closer than 1650' from well producing from same formation. Commingling permissible with Administrative approval. (Order 55-76.)	None
<b>SIOUX PASS, NORTH</b> Interlake (Sil.) Red River (Ord.) Dual Winnipegosis (Dev.) Nisku (Dev.) Red River Ord.) Dual Red River (Ord.)	3 1 1 1	Structural Water Drive	Unknown	320-acre spacing units with well location at least 660' from unit boundary. (Order 12-75.) Field enlarged (Order 16-75.) Commingling from Interlake and Red River approved (Order 36-74.) Refer to Order 35-75 for modification.	None
<b>SNOOSE COULEE</b> Bow Island (L. Cret.) Gas	4	Structural- Strat.	Volumetric	State-wide.	None
<b>SNYDER</b> Tensleep (Penn.)	3 1	Structural (Shut-in)	Water Drive	10-acre spacing units with center 5-spot permitted; 150' topographic tolerance. (Order 45-62.)	None
<b>SOAP CREEK</b> Tensleep, Amsden, Madison (Penn.) (Penn.) (Miss.)	20 2	Structural (Shut-in)	Water Drive	One well per 10-acre spacing unit per producing formation; well location in center of spacing unit with 100' topographic tolerance. (Order 26-60.)	None
<b>SPRING LAKE</b> Nisku (Dev.) Red River (Ord.)	1 2	Structural Structural	Depletion Depletion	One well per 160-acre spacing unit. Well location anywhere within 840' square in center of spacing unit. (Order 6-63.) Field redelineation. (Orders 30-76, 49-76.)	None
<b>SQUAW COULEE</b> (Now included as part of Tiger Ridge Field.) (Order 10-70.0					
<b>STRAWBERRY CREEK</b> Bow Island (L. Cret.) Gas Sawtooth (M. Jur.)	3 1	Structural- Strat.	Volumetric Water Drive	State-wide.	None
<b>STENSVAD</b> Tyler (Penn.)	12 9	Strat. (Shut-in)	Depletion	40-acre spacing units; well location in center of spacing unit with 200' tolerance. (Orders 2-59, 7-60.) Wells may be drilled anywhere within waterflood unit boundary, no closer than 660' from unit boundary. (Orders 5-65, Amended.)	A waterflood operation has been in progress since 1963, using Madison water. (Orders 48-67, 9-67.)
<b>SWANSON CREEK</b> Phillips (U. Cret.) Gas	1	Strat. (Shut-in)	Depletion	320-acre spacing units, well location SE NW each section. Wells no closer than 990' from unit boundary. (Order 36-75.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal	
<b>SUMATRA</b> Tyler (Penn.) Oil & Gas	103	Strat.	Depletion	40-acre spacing units; well located in center of unit with 75' tolerance. (Order 14-58.) Field re-delineated (Order 14-75.)		Four waterflood units using Madison water. (Orders 48-67, 6-69, 15-69, 19-69, 3-70, 16-72, 24-74, 5-75.) Produced water disposed into Madison formation. (Order 7-A-76.)
<b>TIGER RIDGE</b> Judith River (U. Cret.) Gas	5 (Shut-in)	Structural-Strat.	Volumetric Water Drive	160-acre spacing; location no closer than 660' to unit boundary. (Order 32-73.) State-wide, for part not unitized. Two units; (Order 11-72 and 41-72.) Wells 990' from unit boundary.		
Eagle (U. Cret.) Gas	119 30 (Shut-in)	Structural-Strat.	Volumetric Water Drive	Originally one well per section within 2640' square in center of each unit and no closer than 1320' from boundary of unit. Changed to state-wide spacing by (Order 10-70.)		
Sawtooth (Jur.) Oil	1 (Shut-in)	Structural-Strat.	Water Drive	Enlarged and re-delineated (Order 13-75.) 160-acre spacing units in Sections 22, 23, 24, 32N-14E (Eagle and Virgelle) wells at least 990' from section line and 660' from quarter section line (Order 37-75.) (Exception to Order 37-75 by Order 29-76.)	(Orders 17-67, 23-68, 10-70.)	
<b>TIMBER CREEK</b> Sunburst (L. Cret.) Gas	2 (Shut-in)	Strat.	Depletion	320-acre spacing consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from spacing boundary and 990' from field boundary. (Order 24-75.)	None	
<b>TIMBER CREEK, WEST</b> Sunburst (L. Cret.) Gas	1	Strat.	Depletion	640-acre spacing unit located no closer than 660' from unit boundary. (Order 91-76.)	None	
<b>TRAIL CREEK</b> Sunburst (L. Cret.) Gas Bow Island (L. Cret.) Gas	2	Structural-Strat.	Water Drive Volumetric	One well per 320 acres consisting of S½ and N½ of each governmental section but no closer than 990' from spacing boundary. (Orders 33-70, 28-76.)	None	
<b>TULE CREEK</b> Nisku (Dev.)	5 1 (Shut-in)	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 26-62, 6-65, 11-67.)		Produced water injected into Dakota and Judith River formations. (Orders 12-66, 24-67, 8-A-76.)
<b>TULE CREEK, EAST</b> Nisku (Dev.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 40-64, 6-65.)		Water injected into Judith River formation. (Order 13-68.)
<b>TULE CREEK, SOUTH</b> Nisku (Dev.)	3	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit.		Authority given to dispose of produced water into Dakota. (Order 44-64.) Into Judith River formation. (Order 29-67.)
<b>UTOPIA</b> Sawtooth (Jur.) Gas Madison (Miss.)	3 1 (Shut-in)	Structural	Depletion Water Drive	State-wide. Two wells produced small amount of oil from Swift sand.	None	

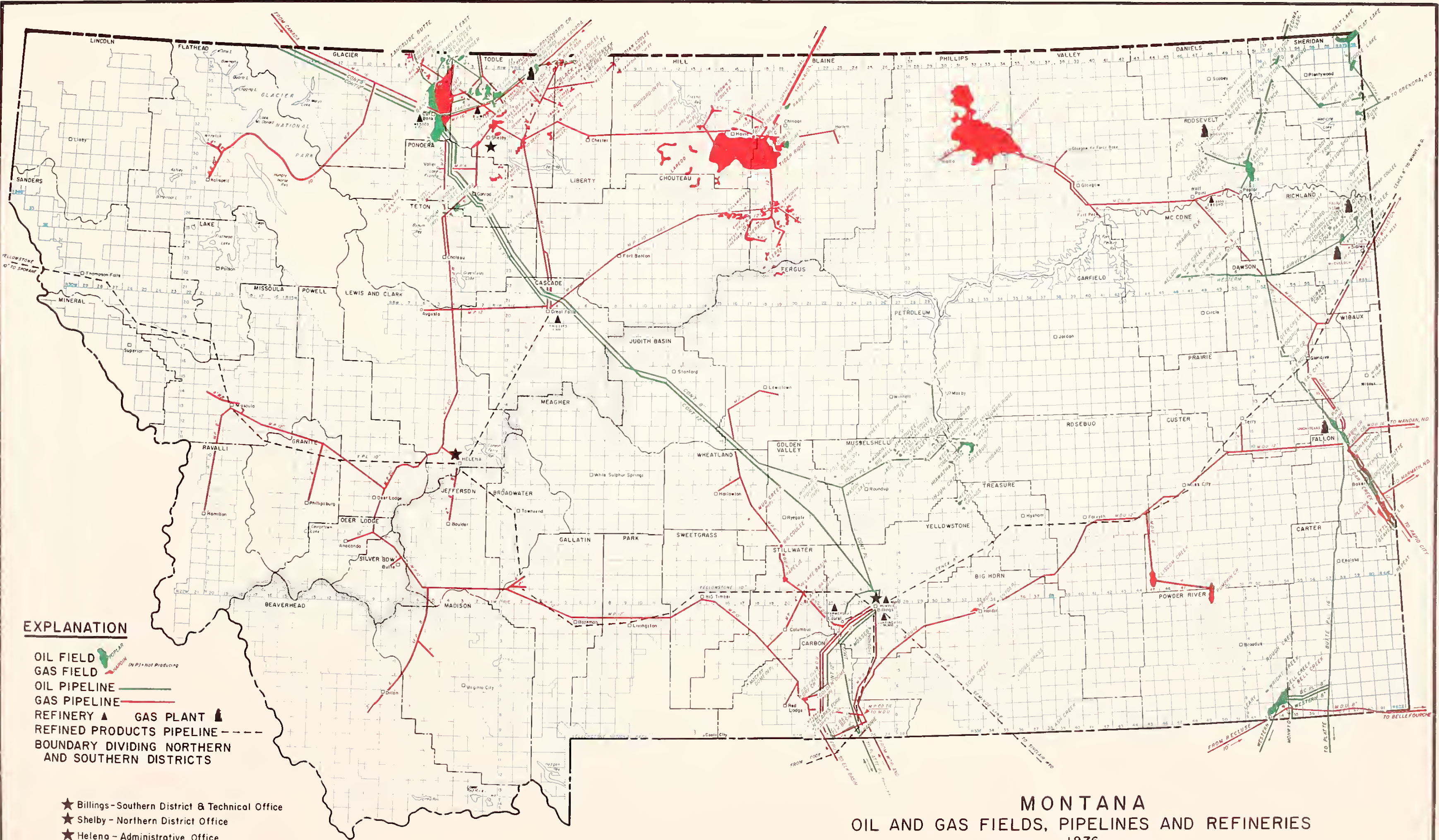
Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>VAUX</b> Red River (Ord.)	1	Structural	Water Drive	State-wide.	None
<b>VIDA</b> Interlake (Sil.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within an 840' square in center of each unit. (Order 39-63.)	Water injected into Lakota formation. (Order 14-68.)
<b>VOLT</b> Nisku (Dev.)	5 2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit. (Orders 27-64, 6-65, 32-65.)	Excess produced water is disposed into Judith River. (Order 3-65, 37-A-74.)
Charles "C" (Miss.)	1	Structural	Water Drive	State-wide.	
<b>WAGON BOX</b> Tyler (Penn.)	2	Structural-Strat.	Unknown	State-wide.	None
<b>WEED CREEK</b> Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
<b>WELDON</b> Kibbey (Miss.)	3 9	Structural	Partial Water Drive	80-acre spacing unit; each quarter section divided into two separate units running in either a north-south or east-west direction; well location in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of quarter section with 200' topographic tolerance. (Order 9-65.)	Excess produced water is disposed into the Dakota, Lakota, Morrison, and Charles formations. (Orders 31-65, 47-65, 37-66, 16-67.)
<b>WEST BUTTE</b> Sunburst (L. Cret.) Oil	1	Structural-Strat.	Depletion	State-wide, except W $\frac{1}{2}$ Section 16 is considered a single spacing unit.	None
Sawtooth (Jur.) Gas Madison (Miss.) Gas	1	Structural	Water Drive	Sawtooth-Madison gas commingled, unitized. (Order 5-72.) No well closer than 330' from unit boundary.	
<b>WEST REAGAN</b> (See Reagan, West)					
<b>WHITLASH</b> Bow Island, Kootenai, Swift (Cret.) (Jur.)	63 7 7 4	Structural-Strat.	Volumetric	Gas: 300' from legal subdivision line and 2400' between wells, 75' topographic tolerance. Oil: 330' from legal subdivision line and 650' between wells; 5-spot location at center of 40-acre tract permitted; 75' topographic tolerance. General Rules 207, 211, 219, 221, 223, and 224 suspended. (Orders 16-54, 27-70.)	None
Madison (Miss.) Gas					
<b>WHITLASH, WEST</b> Sunburst, Swift (Cret.) (Jur.) Sawtooth (Jur.)	1 9 1	Structural-Strat.	Volumetric	Gas: 160-acre spacing units consisting of quarter sections; well location anywhere within a 660' square in center of spacing unit. Oil: 330' from legal subdivision line, 650' between wells in same reservoir on same lease; 5-spot location permitted. (Orders 61-62, 22-65 as amended.)	None



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>WILLOW CREEK, NORTH</b> Tyler (Penn.) Oil	2	Structural- Strat.	Depletion Water Drive	State-wide.	Pilotflood. (order 19-72.)
<b>WILLOW RIDGE</b> Bow Island (L. Cret.) Gas Burwash (Cret.) Oil	4 1 (Shut-in)	Structural- Strat.	Volumetric	State-wide.	None
<b>WILLS CREEK, SOUTH</b> Interlake (Sil.)	2	Structural	Partial Water Drive	160-acre spacing units. Well location in center of SE $\frac{1}{4}$ of each unit with 175' topographic tolerance. (Orders 5-64, 30-66.)	Waterflood initiated 12-1-73. (Order 23-73.)
<b>WINNETT JUNCTION</b> Tyler (Penn.)	5	Strat.	Depletion Water Drive	20-acre spacing units. Units to be designated as W $\frac{1}{2}$ and E $\frac{1}{2}$ of quarter-quarter section, no closer than 120' to the boundary of a spacing unit. (Order 57-76.)	None
<b>WOLF SPRINGS</b> Amsden (Penn.)	2	Structural	Water Drive	80-acre spacing units consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of each quarter section. Well location in center of NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Order 4-56, 9-59.)	None
<b>WOODROW</b> Charles, Duperow, Interlake Red River (Ord.)	1 1 4 (Shut-in)	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Well locations in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 200' topographic tolerance. (Order 47-62.)	Produced water injected into Dakota. (Order 48-62.)
<b>WRIGHT CREEK</b> Muddy (L. Cret.)	3 2 (Shut-in)	Structural- Strat.	Depletion Water Drive	80-acre spacing consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of quarter section with locations in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 200' tolerance.	None







**EXPLANATION**

- OIL FIELD
- GAS FIELD
- OIL PIPELINE
- GAS PIPELINE
- REFINERY
- GAS PLANT
- REFINED PRODUCTS PIPELINE
- BOUNDARY DIVIDING NORTHERN AND SOUTHERN DISTRICTS

- ★ Billings - Southern District & Technical Office
- ★ Shelby - Northern District Office
- ★ Helena - Administrative Office

**MONTANA**  
**OIL AND GAS FIELDS, PIPELINES AND REFINERIES**  
**1976**  
BOARD OF OIL AND GAS CONSERVATION





## STATE OF MONTANA - SUMMARY OF PRODUCING OIL FIELDS - 1976

## MONTANA BOARD OF OIL AND GAS CONSERVATION

LINE NO.	FIELD	COUNTY	PRODUCING FORMATION	YEAR OF DISCOVERY	DEPTH	GRAVITY °API	F.V.F.	NET PAY FT.	POROSITY (%)	SW (%)	O.O.I.P. (BBL/ACRE)	PRODUCTIVE AREA		RECOVERY FACTOR (%)		ULTIMATE RECOVERY (M BBL.)		CUMULATIVE PRODUCTION 1-1-77 (M BBL.)		RESERVES 1-1-77 (M BBL.)		1976 PRODUCTION (BOPO)		ULTIMATE RECOVERY (BBL./ACRE)		LINE NO.
												1-1-77 (ACRES)	O.O.I.P. (M BBL.)	PRIMARY	SECONDARY	PRIMARY	SECONDARY	1-1-77 (M BBL.)	1-1-77 (M BBL.)	1-1-77 (M BBL.)	1-1-77 (M BBL.)	1-1-77 (M BBL.)	1-1-77 (M BBL.)	1-1-77 (M BBL.)		
1	Ash Creek	Big Horn	Shannon (U.Cret.)	1952	4,500	34	1.05	14	22	42	13,200	200	2,640	25	8	650	180	830	748	82	8,788	24	4,150	296	1	
2	Bainville	Roosevelt	Red River (Ord.)	1969	10,300	45	1.75	38	15	34	16,680	320	5,340	8	--	450	--	450	310	140	14,705	40	1,410	37	2	
3	Bears Den	Liberty	Sunburst (L.Cret.)	1924	2,300	39	1.08	20	12	35	11,210	200	2,240	23	--	520	--	520	416	104	10,750	29	2,600	130	3	
4	Bell Creek	Powder River	Muddy (Cret.)	1967	4,400	36	1.11	10	26	23	13,990	16,000	22,840	26	26	58,000	58,000	116,000	86,299	29,701	8,750,163	23,910	7,250	725	4	
5	Benrud, East	Roosevelt	Nisku (Dev.)	1962	7,500	46	1.37	22	15	30	13,080	480	6,280	54	--	3,400	--	3,400	2,032	1,368	142,531	389	7,080	222	5	
6	Benrud, Northeast	Roosevelt	Nisku (Dev.)	1964	7,400	46	1.40	23	16	30	14,270	160	2,280	44	--	1,000	--	1,000	859	141	14,305	39	6,250	272	6	
7	Big Bend	Richland	Red River (Ord.)	1976	12,300	48	1.85	18	8	43	3,440	320	1,100	18	--	200	--	200	43	157	42,580	116	630	35	7	
8	Big Gulley	Musselshell	Tyler (Penn.)	1976	3,800	30	1.25	11	16	30	7,650	80	610	25	--	150	--	150	20	130	20,115	55	1,880	171	8	
9	Big Muddy Creek	Roosevelt	Interlake (Sil.)	1975	11,100	60	1.52	46	3	65	2,470	320	790	13	--	100	--	100	32	68	10,379	28	310	7	9	
10	Big Muddy Creek	Roosevelt	Red River (Ord.)	1975	11,900	48	1.72	11	14	36	4,450	960	4,270	33	--	1,400	--	1,400	540	860	254,379	695	1,460	133	10	
11	Big Wall	Musselshell	Amesden (Penn.)	1953	2,500	19	1.01	17	16	35	13,580	280	3,800	19	--	720	--	720	639	81	8,594	23	2,570	151	11	
12	Big Wall	Musselshell	Tyler (Penn.)	1948	3,000	31	1.02	22	17	40	17,070	1,220	20,830	29	2	6,000	500	6,500	5,998	502	55,968	153	5,330	242	12	
13	Blackfoot	Glacier	Cut Bank (L. Cret.)	1955	3,500	30	1.11	15	15	35	10,220	160	1,640	26	--	420	--	420	106	136	18,978	52	2,630	125	13	
14	Blackfoot	Glacier	Madison (Miss.)	1955	3,600	25	1.15	8	14	40	4,530	480	2,170	36	--	780	--	1,200	1,064	136	18,978	52	1,630	204	14	
15	Boulder	Richland	Duperow (Dev.)	1976	10,400	46	2.30	11	22	16	6,860	160	1,100	18	--	200	--	200	85	115	84,610	231	1,250	114	15	
16	Bowes	Blaine	Sawtooth (M. Jur.)	1949	3,300	19	1.02	37	12	31	23,300	3,760	87,610	8	3	7,200	2,300	9,500	8,104	1,396	126,411	345	2,530	68	16	
17	Breed Creek	Rosebud	Tyler (Penn.)	1976	4,900	32	1.10	20	16	30	17,380	80	1,390	25	--	350	--	350	19	331	19,094	52	4,190	210	17	
18	Branson	Richland	Madison (Miss.)	1954	9,600	32	1.40	40	5	40	6,650	1,120	7,450	15	--	1,100	--	1,100	765	335	34,269	94	980	25	18	
19	Branson	Richland	Red River (Ord.)	1968	12,600	48	1.70	20	10	35	5,930	1,440	8,540	25	--	2,100	--	2,100	1,796	304	52,575	144	1,460	73	19	
20	Branson, South	Richland	Red River (Ord.)	1968	12,600	48	1.70	20	12	30	7,670	480	1,680	28	--	1,750	--	1,750	774	374	52,575	181	1,460	73	19	
21	Brush Lake	Sheridan	Red River (Ord.)	1969	11,400	40	1.50	30	14	35	14,120	2,240	31,630	9	--	3,000	--	3,000	1,652	1,348	119,784	327	1,360	45	21	
22	Burns Creek	Dawson	Red River (Ord.)	1972	11,400	39	1.25	14	14	40	7,300	320	2,340	9	--	200	--	200	135	65	9,028	25	630	45	22	
23	Cabin Creek	Fallon	Madison (Miss.)	1956	7,300	33	1.13	25	11	30	13,220	320	29,880	49	--	14,600	--	14,600	13,433	1,167	267,007	730	6,460	258	23	
24	Cabin Creek	Fallon	Siluro-Ordovician	1953	9,000	33	1.20	50	13	30	29,420	7,620	224,180	23	11	51,000	24,000	75,000	57,850	17,150	1,490,079	4,071	9,840	197	24	
25	Canal	Richland	Red River (Ord.)	1970	12,700	47	2.07	58	8	40	10,430	320	1,340	15	--	500	--	500	443	57	20,858	57	1,560	27	25	
26	Cat Creek (Antelope-Mosby)	Garfield	Kootenai (L. Cret.)	1920	1,200	52	1.10	10	21	19	12,000	200	2,400	21	8	500	200	700	503	508	38,651	106	3,500	350	26	
27	Cat Creek	Petroleum, Garfield	Morrison (U. Jur.)	1945	1,600	52	1.10	6	22	40	5,590	240	1,340	30	--	400	--	400	5,032	508	38,651	106	1,670	278	27	
28	Cat Creek	Petroleum, Garfield	Ellis (U. Jur.)	1945	1,700	52	1.10	25	18	40	19,040	880	16,760	26	1	4,400	100	4,500	17,393	507	60,743	166	19,890	390	28	
29	Cat Creek (West Dome)	Petroleum	Kootenai (L. Cret.)	1920	1,100	52	1.10	51	21	19	61,180	900	55,060	27	6	14,600	3,300	17,900	17,393	507	60,743	166	19,890	390	29	
30	Cat Creek	Petroleum	Amesden (Penn.)	1967	2,000	52	1.00	10	8	30	4,340	80	350	17	14	60	50	110	64	46	5,796	16	1,380	138	30	
31	Charlie Creek	Richland	Nisku (Dev.)	1976	9,900	42	1.60	12	6	35	2,270	320	730	14	--	100	--	100	110	99	2,375	6	310	52	31	
32																										







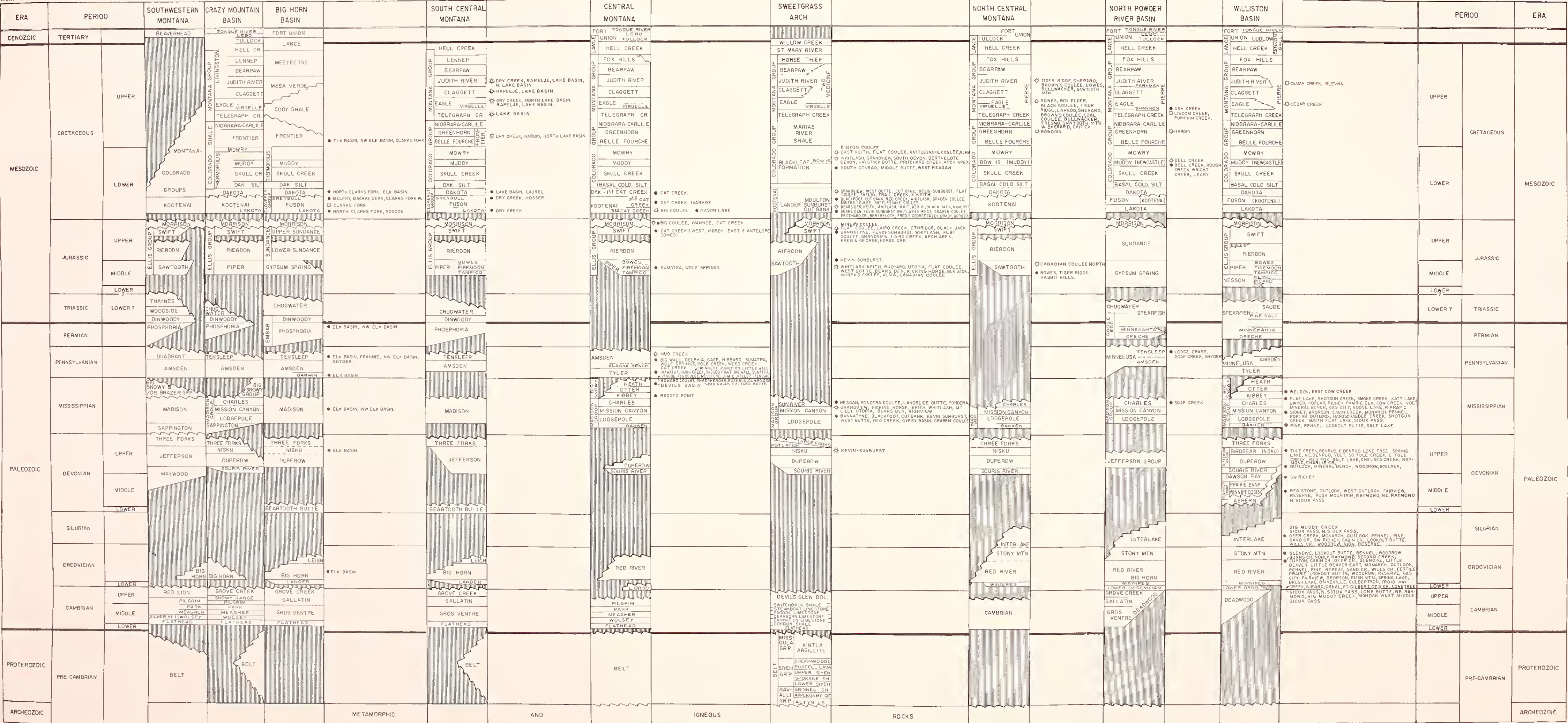
GENERALIZED STRATIGRAPHIC CORRELATION CHART

SHOWING PRODUCTIVE FORMATIONS IN MONTANA OIL AND GAS FIELDS \*

• OIL \* GAS  
1976

CHARLES G. MAIO, GEOLOGIST — JUDSON O. SWEET, PETROLEUM ENGINEER

MONTANA BOARD OF OIL AND GAS CONSERVATION



\* SOME FIELDS SHOWN ARE DEPLETED OR NO LONGER PRODUCTIVE.









